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ORIGINAL COMMUNICATIONS.

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CONSERVATIVE TREATMENT OF SUPPURATION OF THE ACCESSORY SINUSES OF THE NOSE.*

DR. E. B. GLEASON, Philadelphia.

By conservative treatment is meant such measures either medicinal or surgical as tend to restore the normal functions of the inflamed sinuses, in contra-distinction to radical operations whose object is to destroy the affected structures.

The considerable number of patients who have sought relief from conditions that they state are infinitely worse than those for which the radical operation or operations were done suggested this paper. In some instances the stories have been absolutely astounding as to the trifling symptoms for whose relief a Killian operation for example was performed. In one case a number of radical operations were done where it was stated by the patient that the sole subjective symptoms were increased post-nasal secretions and occasional headaches. Somewhat numerous cases of a similar character have lead to the conclusion that the more difficult knowledge to acquire is not how to do difficult operations but when not to do them.

Stucky¹ states, "within the past three years I have been especially impressed with how little intra-nasal surgery is necessary to relieve the most complicated and serious conditions in which the visual

*Read at the meeting of the Section on Otology and Laryngology of the College of Physicians, Philadelphia, October 21, 1914.

apparatus presents the most alarming symptoms, and I am finding fewer cases that require the radical external operation even for the relief of suppurative pan-sinusitis."

Protests against excessive radicalism in the treatment of accessory sinus disease have lately become somewhat frequent, from all parts of this country and abroad. Dr. J. J. Kyle,² in a paper on the diagnosis and treatment of nasal sinus suppuration, read before the Section on the Eye, Ear, Nose and Throat of the California State Medical Society states that "meningitis is seldom a result of sinus suppuration but of an operation to relieve the chronic condition." In the discussion of Dr. Kyle's paper, Dr. H. Thomas stated that he had examined 1,500 cases and that, instead of sinusitis cases having optic neuritis, out of hundreds of cases of optic neuritis, but a small percentage had sinusitis, the larger majority of whom were luetic.

Simon Oppenheimer³ states that "if free drainage is present and there are no signs of ill-effects on the general health but only an occasional headache, and if the patient can be kept under observation, the risks of radical operation more than counterbalance the advantages." Prof. Kuemmel of Heidelberg,⁴ after reviewing a fatality following removal of the ethmoid labyrinth, states, "that unless there is some vital indication, too little is better than too much interference in chronic frontal or ethmoid sinusitis."

That orbital lesions, the result of ethmoid suppuration, sometimes recover without operation is shown by the following case: William O'C., 65 years of age; divergent squint of left eye present for about three weeks; left-sided frontal headache; syphilitic history negative; negative Wassermann reaction; x-ray shadow within the orbit connected with opaque ethmoid cells. No pus in the olfactory slit nor beneath the middle turbinate. All operative treatment refused, even the removal of the middle turbinate. Treatment consisted of 10 grs. of iodid of potassium three times a day part of the time and the deposite of 5 drops of iodine-potas, iodid-glycerine above and beneath the middle turbinate each day. There was complete recovery of all ocular functions after about five weeks.

January, 1914, Dr. Herbert M. Goddard⁵ exhibited a so-called "fulminating" case of frontal sinus suppuration with exophthalmus and greatly impaired vision, which promptly subsided as the result of establishing drainage from the frontal sinus by means of Sullivan's rasps. This is probably the simplest method of destroying the naso-frontal duct in cases where the frontal sinus can be probed, but when the sinus cannot be probed the method of Mosher is pre-

ferable. However, either method usually affords ample drainage from the frontal sinus.

In a series of ten cases of ethmoiditis recently treated by the writer, eight were acute and two chronic. Of these, three had the anterior cells opened by Mosher's method and one chronic case had exenterization of the posterior labyrinth with opening of the sphenoid antrum done by the Mosher method. The second chronic case is apparently cured and the other five acute cases recovered without operation.

The method of treatment in suppurative cases with pus flowing from beneath the middle turbinate and into the olfactory slit is as follows: The parts are first cleaned by douching with normal salt solution. Pledgets of absorbent cotton saturated with 2 per cent cocain are then pressed into the olfactory slit and beneath the middle turbinate where they are allowed to remain for about five minutes. The operator is provided with a number of pure silver tubes about nine centimeters long. These tubes are of about the size of a frontal sinus probe, but some are slightly larger, some smaller. When screwed to the end of a hypodermic syringe they make excellent probes, as they can be bent to a curve suitable for entering the frontal and sphenoid sinus or any accessible portion of the nose.

After the cotton pledgets saturated with 2 per cent cocain have been removed, a cannula at the end of a two drachm syringe is introduced beneath the middle turbinate or into the olfactory slit and all pus removed by suction and douching. Four or five drops of some medicant, in most cases 10 per cent argyrol, is then deposited between the middle turbinate and the external nasal wall and also in the vault of the nose through the olfactory slit. The position of the infundibulum should be borne in mind, as it sometimes acts as a reservoir for the solution while the proximity of the nasal walls produces capillary attraction which retains the solution for a considerable time in intimate contact with diseased structures in the same manner that pus is often retained in this locality. Frequently the ostium of the frontal, but more especially that of the sphenoid, is readily penetrated by the curved cannula and the sinuses cleansed and medicated if required. Often the sphenoid is penetrated almost inadvertently, but the introduction of a small amount of argyrol into a normal frontal or sphenoid sinus is apparently absolutely harmless.

There is a decided tendency for acute sinusitis to recover spontaneously, provided the ostia of the infected cavities remain patent and the argyrol solution deposited about the ostia reduces the

inflammatory swelling of these regions and tends to bring about this result by maintaining effective drainage. Where this treatment is not sufficient, operative measures must be resorted to. The simplest is the removal of small polypi from beneath the middle turbinate, which as pointed out long ago by Garel⁶ of Lyons, France, are not infrequently found in this locality as a cause of obstructive drainage. The next simplest method is the fracturing of the middle turbinate toward the septum or when the vault of the nose is narrow, the removal of the middle turbinate. Stucky¹ states, "the middle turbinate seems to be the chief offender and should be dealt with as radically as is consistent with the conditions, at the same time conserving tissue and protecting against traumatism."

A middle turbinate which is too large for the space it occupies is a common cause of recurrent attacks of congestion of the frontal sinus and ethmoid cells. It is a frequent cause of asthenopia and unilateral headaches. Even in cases where the transillumination and the x-ray show a shadow in the frontal sinus and the ethmoid, all symptoms sometimes disappear after removal of the middle turbinate. Trans-illumination and x-ray negatives are often misleading because as stated by Ballenger⁷ it is impossible from the shadow to make a differential diagnosis between the simplest kind of catarrhal inflammation and purulent infection.

Of the intra-nasal operations for improving the ventilation and drainage of the frontal sinus, there are the rasps of Good and Sullivan and the obliteration of the ad-nasal duct by Mosher's method. In each of these methods there should ordinarily be as little destruction of the anterior ethmoid cells as the conditions of the case will permit, and it is often advisable to preserve at least the major portion of the middle turbinate.

The same remarks as to the tendency of acute accessory sinus suppuration to recover when there is good drainage through a patent ostium also applies in a less degree to chronic cases. At any rate, it is usually possible to get rid of the pain, even though a scanty discharge still continues; but such cases may have a return of headache from time to time as the result of coryza. The end-results are usually infinitely better from conservative treatment than when the entire ethmoid labyrinth is exenterated by either the methods of Hajac, Ballenger or Mosher. Especially when both labyrinths are removed, the frequent end-result is a dissatisfied patient; while the number of fatalities and such serious results as blindness or otitis are more numerous than generally supposed.

Before doing a Killian operation or even a complete exenteration of the labyrinth by the Mosher or other intra-nasal method, the risks and possible end-results should be carefully explained to the patient. From the Killian, there is external deformity, possible external fistula, double vision or blindness, and complete exenteration often causes accumulations of mucus, sensations of discomfort in the nose and chronic pharyngitis with a dry, sore throat. There is a possibility of a fatality from either operation.

There are doubtless a few cases of acute fulminating suppuration and some chronic suppuration where the Killian operation is justifiable or even imperative; but the fact remains that those who have done the fewest Killians or complete exenterations of the labyrinth by the nasal route have the least to regret in the number of dissatisfied patients, and except where the symptoms are most urgent it is better to resort to less radical procedures, which in the majority of cases are adequate and yield infinitely better end-results. Ballenger⁸ states: "After an experience of more than 400 cases operated via the vicious circle of the nose, I am convinced that but few cases of frontal and ethmoidal sinusitis require more radical surgical interference."

Fortunately, the proximity of important structures has rendered curettement of the sphenoid so dangerous that it is rarely attempted. The removal of a considerable portion of the anterior wall is usually followed by a rapid improvement in the condition of the sphenoidal mucous membrane, so that a cure is established before the anterior opening closes. The same is probably true of large opening into the posterior ethmoid cells. Necrotic bone, the usual excuse for a radical operation, is extremely rare in the nasal accessory sinuses; polypus is probably the most common condition interfering with cure by conservative methods, and except when polypoid degeneration exists and the mucous membrane is damaged beyond repair, conservative treatment of accessory sinus suppuration is amply sufficient. However, as Miles⁹ states: "It is a question of what is a true polyp. Whether it is capable of going back to normal. It would seem that almost all flat polyps have that power."

As a method of diagnosis, trans-illumination but more especially clinical symptoms are infinitely more reliable than the x-ray; because as long ago demonstrated by Caldwell, the opacity of pus to the x-ray is precisely that of normal salt solution or pure water. A shadow in the x-ray negative of the nasal accessory sinuses ordinarily means simply swollen mucous membrane. It persists for a long time, for example in chronic antrum cases where good drain-

age has been secured and all clinical symptoms have disappeared. The mere presence of a shadow in an x-ray negative of the accessory sinuses is certainly not an indication for a radical operation except for gentlemen of little learning and less judgment anxious to impress upon the uninitiated their operative ability.

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Case of Dermoid Polypus of the Pharynx. R. J. POUGET, *Rev. hebdomadaire de Laryngol.*, May 16, 1914.

Dermoid polypi of the pharynx are rare. In his inaugural thesis in 1908, Bastgen could collate only twenty-seven cases from available literature. An equal number have probably been described since that date.

In the case reported, a girl of 10 years, the tumor was pyriform, pediculated and the size of a large almond. Its attachment was between the two tonsillar pillars on the right side just above the tonsil. It was removed by a galvano-caustic snare.

In the microscopic examination, in addition to the usual histologic findings in such cases, the tumor contained a small grape-like gland of the salivary type, and the author asks if this may not be a small aberrant parotid gland.

SCHEPPEGHELL.

A FURTHER REPORT OF CASES OF INFLAMMATORY AFFECTIONS OF THE LABYRINTH.*

DR. WENDELL C. PHILLIPS, New York City.

On January 10, 1913, in conjunction with Drs. Fowler, Kopetzky and Sharp, I had the pleasure of reporting twenty cases of labyrinthine affections before the Sections on Otology of the New York Academy of Medicine.

Since that date a series of six cases have occurred in my various services, this series including one private case of Dr. J. J. Thomson and one of Dr. J. C. Sharp. In the former series the diagnosis and treatment of the cases was given in full without comment or conclusions. The same rule is followed in the present series, it being my belief that there are certain points in the management of purulent labyrinthitis that can only be settled upon a basis of an extended series of cases.

I take this occasion to suggest to the members of this society that they keep careful notes of every case and report them in full, especially autopsy data whenever it can be secured.

Case 1: S. Z., male, aged 52, seen for the first time September 9, 1913. Nine years ago abscess in right ear. Discharge began without pain, has continued since then, and has always been foul. Eight weeks ago attacks of vertigo in the mornings. Attacks increased in severity and four weeks ago nausea and vomiting with each attack accompanied by severe headache on right side. He was compelled to remain in bed, unable to raise his head without vertigo, nausea and vomiting. For the past two weeks he has felt better and has been up and about again; complains now of slight unsteadiness in his gait, and headache. During the attack four weeks ago he had fever and has lost considerable weight. He does not remember when he had hearing in his right ear; mind clear; recognizes and can name objects presented to him. Pupils are equal and react promptly to light; knee jerks increased; no ataxia in arms or legs; no spontaneous pointing error; no adiadochokinesis; no paresis arms or legs.

Functional examination: Right ear, total deafness, (noise apparatus). Spontaneous rotatory nystagmus to both sides, more

*Read at the forty-seventh meeting of the American Otological Society, Atlantic City, May 28, 1914.

marked to left (sound side). Patient has tendency to fall to the right irrespective of the position of the head.

Rotation to right, nystagmus 17 degrees—probably compensation nystagmus. Rotation to left, nystagmus 18 degrees. Caloric, right negative.

Caloric, left rotation nystagmus. Right lasting $2\frac{1}{2}$ minutes (not prolonged). Fistula test negative.

Operation: Radical mastoid operation and drainage of labyrinth (September 12, 1913).

Large cholesteatoma which had eroded tegmen of the attic aditus and antrum was discovered. Large exposure of dura middle fossa which was covered with cholesteatoma, matrix and granulations. Large irregular fistula in external semi-circular canal; oval window does not contain stapes.

Post-operative: Pulse 70-80. Temperature 99.6° - 100.8° . Headache persists, but patient appears better. Slight facial paralysis.

September 30. Headache persists. Pulse, temperature, eyes, normal. Appetite fair. Plastic with closure of posterior wound. Considerable gain in weight.

October 7. Very little headache. Temperature, pulse, eye grounds normal.

October 10. Patient left hospital. Condition good. Feels well. Radical cavity not completely epidermatized. For almost a month patient gained in weight, felt well, grew gradually stronger, and was considering his return to his work, but he did complain of more or less persistent headache, all other localizing signs being absent.

November 6. Suddenly intense headache, vertigo, nausea, followed by high fever and persistent vomiting. Re-admitted to the hospital. Temperature 103° , pulse, 86, head retracted, neck rigid, cervical vertebrae tender, pupils sluggish, knee jerks increased, Kernig positive, delirium. Cerebro-spinal fluid turbid, contains many leucocytes and cocci. The same night, chiefly for the reason that his headache had invariably been located in the temporal region, extending to the outer angle of the orbit, I decided to explore that region first. The same night I evacuated a large temporo-sphenoidal abscess; pus green and very foul. After evacuation of abscess, pulse 120. Death in twenty-four hours from diffuse purulent meningitis. No autopsy could be obtained.

Case 2: S. T., male, aged 24 years, admitted to the Manhattan Eye, Ear and Throat Hospital September 16, 1913.

Chronic purulent otitis media, right, for past twelve years. Discharge moderate in amount, and at intervals ceased entirely. Gen-

eral health good. Wassermann negative. One month ago cold and earache for two days accompanied by an increase in the discharge. Felt suddenly faint after a few moments, vertigo and vomiting which occurred at intervals for two days. Thereafter he experienced vertigo whenever the eyes were rotated to the side; vertigo also when stooping. He had an attack two days ago but at present is not dizzy.

Functional examination: Voice right, 8 feet. Voice left, 2 feet. Weber to right, Rinne both negative. Spontaneous nystagmus toward both sides about equal. Turning to right, nystagmus 16 degrees. Turning to left, nystagmus 21 degrees. Fistula test positive.

Operation: Radical mastoid operation. Large fistula in the anterior limb of external semi-circular canal. Following operation, partial facial paralysis. Hearing present, no increase in the spontaneous nystagmus. September 23, condition unchanged. No vertigo. September 30, plastic with suture of posterior wound. January 17, 1914, hearing present, whisper at few inches. Rotation to right, nystagmus 23 degrees. Rotation to left, nystagmus 29 degrees. Caloric positive. Fistula test negative. Facial paralysis subsiding.

Case 3: E. C., female, aged 10 years, Dr. Sharp's patient. Chronic purulent otitis media, right, since infancy. Discharge rather profuse and foul. No tenderness of mastoid, no edema, fundus full of granulations.

Functional tests: Right ear, hearing totally destroyed, (noise apparatus). Caloric positive. Fistula test negative.

Operation: April 16, 1914, radical mastoid operation was performed by Dr. Sharp in the Manhattan Eye, Ear and Throat Hospital. No fistula in the labyrinthine capsule. Cavity not yet epidermatized. Hearing entirely destroyed.

Case 4: E. S., male, aged —, admitted to the Manhattan Eye, Ear and Throat Hospital, January 28, 1914. Dr. Kopetzky had charge of the case.

Family history negative. Previous history: Has always been well and strong. At 8 years of age was operated upon for a "swelling" behind the right ear. This ear was re-operated upon when he was 16 years old. Since that time the ear has discharged constantly but not profusely. For the past few days slight headache. Patient presents a partly epidermatized radical cavity. Inner tympanic wall contains few granulations. Some discharge. No tenderness.

Functional tests: Left ear hearing normal. Right ear total deafness, (noise apparatus). Caloric positive. Weber to left. Schwabach right shortened. Rinne right negative ad infinity. Spontaneous nystagmus to both sides more marked to left. No Romberg or ataxia. Rotation to right, 20 degrees. Compensation. Rotation to right nystagmus 18 degrees. Caloric right negative. Weber to left. Fistula test negative.

Secondary radical operation by Dr. Kopetzky. In the region of the tube, granulations and polypi. The inner tympanic wall consisted of dense, newly formed bone which had obliterated the foramen ovale, the foramen rotundum and the entire labyrinth. Small exposure of sinus. Plastic and suture. The radical cavity is now completely epidermatized.

Case 5: Case of labyrinthine fistula. I am permitted to report this case through the courtesy of Dr. J. J. Thomson.

M. C., female, aged 18 years, was seen for the first time January 16, 1914, and gave the following history: She has always been a healthy girl, and with the exception of measles, chickenpox and whooping cough, has not suffered from any of the usual diseases of childhood. She stated positively that until six weeks previously, she had never had any trouble with her ears. Her father and mother, in spite of repeated questioning, also were positive that she had never had discharge or even an earache. No family or personal history of tuberculosis could be obtained.

Six weeks ago she had a severe cold followed by acute otitis media in the left ear. The drum ruptured spontaneously and the ear has discharged profusely since. She has not had any marked pain since the rupture of the drum, but the mastoid has been tender at times for the past four weeks. She has had tinnitus and defective hearing in the left ear since the beginning of the otitis. The day before her visit to me, she noticed that she was a little dizzy when she turned her head rapidly, and the morning of January 16 was more so, but was able to be about, and only felt dizzy when she turned her head. She had not vomited or felt nauseated.

Examination: The drum could not be seen, on account of narrowing of the canal at the fundus. There was what appeared to be a granulation at the bottom of the canal. There was a moderate amount of discharge not very malodorous, culture from which grew staphylococcus aureus only. The mastoid was very tender, but not swollen. Temperature was 99.4°, and pulse 88. There was hearing in the left ear, but only a loud voice could be heard, and she

lateralized the Weber to the left ear. The caloric test was negative, but I think this was due to our inability to get the water far enough into the canal. There was a very marked positive fistula test. Compression would cause a rotatory nystagmus toward the diseased ear which would last for several minutes. There was no spontaneous nystagmus.

The following day the same tests were made and gave the same result. All the symptoms were the same. It was decided to wait a few days before doing any operative procedure, on account of the recent onset of the dizziness. January 18 she vomited a few times and felt nauseated a good deal, and said for the first time that she felt dizzy while lying quietly in bed. There was also a slight spontaneous nystagmus toward the good ear.

Operation: The mastoid cortex was removed with the rongeur without the use of a chisel to avoid jarring. On its removal, a whitish membrane presented in the cavity which resembled somewhat the lateral sinus, but while we were observing it, pus began to exude from beneath it under pressure, and it proved to be a membrane enclosing about two drachms of pus and granulations. Culture from pus did not grow any bacteria. This was a large perisinus abscess. A radical operation was done. The incus was not seen, but the bleeding was so profuse that I could not tell positively that it was not removed without being observed. A portion of the malleus was recovered, and the stapes was seen in place. There was a large fistula in the horizontal semi-circular canal, occupying the position of the maximum of its convexity. This fistula was covered by a pad of granulations.

The evening of the operation there was no change in the nystagmus. It was still directed to the sound ear and was apparent on the slightest rotation to the right, but not when the patient looked directly ahead. During the next twenty-four hours the patient was comfortable, there was no dizziness or nausea, nor rise in temperature.

January 21. Patient is feeling well, has good appetite, has not been dizzy and temperature is normal. The spontaneous nystagmus is less marked than before operation but is still present, and is directed toward the sound ear. In the Weber test the sound of the fork is heard in the operated ear. January 23. First dressing. Wound is clean, temperature normal, no dizziness, and the spontaneous nystagmus has disappeared. Weber lateralized to the operated ear. Patient is allowed to sit up. January 31. Plastic oper-

ation performed. Posterior wound closed. Stitches became infected in the lower part of posterior wound. Wound opened. February 16. Wound doing well. Middle ear epidermalized. February 25. Wound entirely healed and patient discharged. Hearing distance for the whisper in the operated ear is 20 feet.

Case 6: Report of a case of suppurative labyrinthitis. This case came to Dr. Phillips' Clinic at the Manhattan Eye and Ear Hospital April 5, 1913. He gave a history of dizziness for about two weeks. He had chronic suppuration for a great many years in both ears. Both ears were discharging slightly at examination. Patient did not complain of anything but dizziness and deafness. Tests: Hearing in both ears tested with noise apparatus. Very little hearing in right ear. Rotation to right, nystagmus to left for 14 seconds. Rotation to left, nystagmus to right for 9 seconds. Caloric test negative in right ear, not used in left. Patient sent to hospital. A few days later he complained of severe headache, and had a temperature of 100° . Neither mastoids were tender, and the discharge was less in each ear. Tongue coated and remained so in spite of free catharsis. The severe headache continued for a week, the patient was rational, memory good, eye-grounds clear, temperature from 100° to 102° . Pulse gradually became slower until it was 60, but at times it would go to 88. No retraction of head, dizziness disappeared, headache improved after ten days, but returned. Leucocytosis count negative; headache, variable, but usually present, localized to the left side. No vomiting. Patient gave a history of syphilis, and has old cutaneous lesions. Wassermann was negative.

Examination on April 18 showed very little change. Patient rational and clear. Memory good. No pain or percussion of head. No mastoid tenderness. No dizziness. Nystagmus spontaneous to the left. Hearing for watch apparently present in right ear. Hearing in left. No restlessness. Headache still present. Tongue coated. Temperature 102° . Had a chill in the morning. Exploration of the cerebellum the following day. Decided on anti-syphilitic treatment. Also ordered spinal puncture. Examination of fluid showed it to be loaded with streptococcus mucosa. Chemical tests showed excess of lactic acid, absence of copper reducing agent. Patient almost unconscious. Facial paralysis present. Condition very bad. Operation, drainage of cisterna magna. Cerebellum directly under dura. Only small amount of fluid escaped. Patient died same night.

Autopsy: Mastoid filled with pus—purulent labyrinthitis—meningitis—no abscess. Autopsy of head only permitted. Removal

of the cranial vault showed the dura very adherent to the bone throughout its extent. The meninges tissues thickened—evidence of a chronic inflammatory process presented.

The opened meninges revealed a large collection of thin fluid in the meshes of the pia. The largest collection of this fluid was found in the posterior cranial fossa. The membranes at the base of the brain generally were more acutely inflamed than elsewhere.

Upon removing the brain, a rather distinct collection of whitish pus—in contrast with the other collections of fluid found—was localized at the internal auditory meatus, filling this structure and bathing the facial and the auditory nerves. The removal of the adherent meninges from the bone on the internal side of the petrosa, disclosed darkly discolored bone, involving the tegmen tympani, and tegmen cellulae mastoidea.

Opening the tegmen in these regions, we found the tympanic cavity filled with purulent contents, semi-fluid in nature. The malleus was recovered and found to present no evidence of necrosis. The incus was not found. The removal of the tegmen cellulae mastoidea revealed the mastoid process filled with dark, discolored, thick, but semi-fluid mass—some intra-cellular walls were present, but the probe easily broke down these evidences of an acute infection of the mastoid process.

Opening inward into the cochlea from the internal auditory meatus, we found this structure likewise filled with similar purulent matter, the only anatomical structure intact being the promontory. The superior semi-circular canal was likewise discolored. The lateral sinus on the right side contained a red thrombus—probably a post-mortem condition.

Brain: Pial vessels injected. Both lateral ventricles much distended with a water-clear fluid. Incision into two sections of both the cerebrum and the cerebellum failed to reveal any abscesses.

COMMENTS ON AUTOPSY FINDINGS.

The Autopsy findings warrant the following conclusions:

1. The patient suffered from an old, chronic meningeal inflammation. His admission of having had syphilis would explain this finding, in spite of the negative report of the Wassermann.
2. There was an acute exacerbation or an acute infection of the middle ear and the labyrinth cavities. The intact malleus, with its ligament attachments, speaks against a chronic middle-ear infection. The bacterial finding also speaks against a chronic otitis media. The acute infections involved the middle ear, including the

mastoid process, and the labyrinth, finally breaking endo-cranially along the route of the nerves, facial and auditory, to begin the infection of the meninges at the internal auditory meatus.

3. The infection resulted in a general involvement of the basilar meninges, and the accumulation of purulent fluid in the posterior cranial fossa—a posterior basilar meningitis resulting. The distension of the lateral ventricles by water-clear fluid was a secondary manifestation.

4. The facial paralysis noted as presenting itself on April 19, just prior to operative intervention of the meninges, is accounted for by the route travelled by the infection from the internal ear to the meninges.

5. The operation for the drainage of the cisterna magna was not successful, in so far that there was present at autopsy a very large collection of pus in the posterior cranial fossa, which was not drained off by the procedure, although this opening did not sufficiently divide the foramen magnum from the internal side.

(Note). There is no way of telling whether this accumulation of fluid in the posterior cranial fossa was an artifact of post-mortem incident, or not. Certainly at the time of operation there was no such collection of fluid present, as the cerebellum presented itself immediately upon incision of the dura.

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Surgical Treatment of Post-operative Palate Defects. G. V. I.

BROWN, *Jour. A. M. A.*, May 16, 1914, p. 1539.

For successful closing of palatal defects, their underlying factors must be discovered and corrected. If a second operation be necessary it should only be performed after nine months or a year. Patients who have been operated on in early infancy by compression or a forcing together of the maxillary bones with silver wire and lead plates present the most difficult post-operative defects. They have nasal defects, histories of middle-ear and mastoid disease, deformities of mouth due to contracted palates, and loss of tooth-germs due to destruction when inserting wires. Ed.

NEW SUBMUCOUS SEPTAL OPERATION.

DR. O. TYDINGS, Chicago.

In 1909, this operation was first performed upon a girl, 9 years old, for the correction of a nasal deformity due to trauma, received some years before.

The triangular cartilage had been fractured and it had united at nearly a vertical angle, the anterior edge projecting into the right nasal cavity, the apex into the left, producing marked stenosis upon each side.

While in this case the operation was limited to the cartilage, subsequent work, by myself and later by my associate, Dr. O. J. Nothenberg, has demonstrated that it has a wider range of application than I at first thought.

The advantages are that: 1. It preserves intact all the structures of the septum, unless there be a redundancy of tissue, in which case to that extent it should be removed. 2. When correcting a displacement of the so-called columnar cartilage any operation which removed this part of the septum leaves a lack of sense of resistance while wiping or touching that part of the nose, which is somewhat disquieting to the patient. 3. Where there is a distinct dip to the tip of the nose this can be elevated, making a marked improvement in the appearance.

Forms of deflection: The three most frequent are: The purely cartilaginous where the displacement is anterior to the mesethmoid and vomer articulation; 2. those beyond this articulation; 3. those which involve both the cartilage and bone.

Cartilaginous: In the pure cartilaginous deflections or displacements, whether due to trauma or developmental causes, the incision is made upon the convex side just anterior to the deflection going through the coverings and cartilage to the perichondrium upon the concave side. Then taking a slightly curved elevator with its concavity towards the concave side of the septum, you elevate the perichondrium and its overlying membrane past its juncture with the mesethmoid articulation moving along the line of least resistance, which is usually near the center of the cartilage going beyond the mesethmoid and vomer. When this articulation is passed dissect towards the floor in the line of least resistance until it is reached, when with Freer's elevator to you (angular, dull elevator Figure I. B.)

start forward hugging the vomer until you reach the interlacing periosteum at the superior anterior border of vomer. This is severed with Freer's (sharp angular elevator, Figure I d). Proceed forward until you have elevated the perichondrium upon the concave side of the cartilage, which will take you into the opposite nares to the point of entrance, elevating the perichondrium ahead of you, loosing up all constricting bands until you have the maxillary crest upon the concave side laid bare. You then go to the convex side and elevate the perichondrium upon that side for about $\frac{3}{8}$ to a half inch along the border to form a flap, when you have placed the cartilage in the perpendicular position. After this you release your cartilage by severing all adhesive bands and push it over in the



Figure 1. Vertical section of an ordinary deflection.

groove along the maxillary crest upon the opposite side. You then place in position your flap, it usually drops there, and introduce your retaining splint.

For this I have used Meyer's or Kyle's splint, but have early learned that an ordinary shawl-pin two inches long with head covered with sealing wax is the best for this work. This is introduced through the loose connective tissue just anterior to the cartilage starting from the concave side and passing through. Turning the pin a little more than parallel to the septum you re-enter the mucosa and try to get under the perichondrium and force it at an angle of about 45 degrees toward the floor of the nose, so as to engage it in the dense structures at the anterior part of the vomer, and find anchorage in the bony floor.

Where you have a marked bending of the septum it is sometimes necessary after crossing over this elevation to again pass through the cartilage at its junction with the vomer, and find anchorage on the side of the vomer from which you started.

Where you have the so-called columnar displacement you press the mobile septum and mucosa toward the concave side, making your incision just over the anterior part of the cartilage so as to throw your line of incision well back of the tip of the cartilage. When your work is done this places it where it will be held in position with the pin, as well as enable you to make a space anterior to the bony septum to receive the cartilage. I sometimes anchor this with sutures, using no pins, or again I use both pin and sutures.

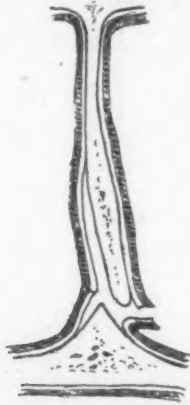


Figure 2 shows the dissection complete.

Deflections beginning behind the triangular cartilage and mesethmoid vomer articulation: These are of two kinds and due to developmental causes. 1. Where the septum is perfectly straight upon one side and protrudes into the other side of nares. This is due to the squeezing out of the vomer nasal cartilage and can be remedied by elevating the periosteum over this structure and shelving it out of its bed. Generally it is easily accomplished. You then replace coverings and introduce a light gauze packing for twenty-four hours.

2. Cases where bone and vomero-nasal cartilage are both deflected. In these cases you start high up on the septum, pressing through the triangular cartilage just anterior to its articulation with the mesethmoid to the concave side and elevate the periosteum over

the concave surface covering the interlacing periosteum over the anterior superior border of vomer. The periosteum is then elevated over the convex side of the bony septum and vomero-nasal cartilage which is removed and if necessary the bone is severed towards the floor where the bend starts and shoved into position. The bone here is generally very friable, but more frequently than not you can get anchorage of your part, loosened up upon the concave side of the vomer, sufficient to hold the parts in place. When you do you can remove the gauze packing, which you introduce upon the convex side, after the part has been held in position for twenty-four to forty-eight hours.



Figure 3 shows the position when replaced.

Often you will find the vomer perfectly straight and only the mesethmoid and vomero nasal cartilage deflected, but you must free with a chisel all of the deflected surface before attempting to replace it.

3. Where triangular cartilage, mesethmoid and vomer are deflected. In correcting these cases you start as you would if cartilage alone were involved and your dissection is in the same line, but more extensive. You go just beyond the limit of bony deflection on the concave side elevating the perichondrium and periosteum to the extreme limit of the deflection. You then return to the side of your primary incision upon the convex side and elevate the overlying structure, exposing cartilage and bone. You then sever all restraining adhesions, whether fibrous, cartilage or bone, always keeping in

mind the interlacing periosteum at the anterior superior part of the vomer and that bone and cartilage have their own separate coverings.

In severing bone start at the beginning of the deflection, below. You use the chisel and this is more easily accomplished after the removal of the vomero-nasal cartilage. After all is free you place the structures in a perpendicular position, making sure that your soft tissues on the convex side are not pinched by the replaced structures, but can be used as a flap. Then introduce your splints with pin and gauze to retain them in position.

Most deflections can be corrected by this method; only a small proportion of the thickened and irregular deflections need the classic operation of Prof. Freer, to whose inventive genius I am indebted for the instruments which have made this operation possible.

31 North State Street.

Tonsillar Operation in Children. ERNEST WINCKLER. *Monatschr. f. Ohrenh. Bd. 48, Heft. 6, 1914, p. 776.*

Mackenzie, in his famous article on the "Massacre of the tonsil," pleads for the conservation of an organ that he considers of great importance for the child's metabolism. Winckler, on the other hand, advocates for this procedure the heaviest armament of faucial warfare, the tonsillectome. In a number of cases he examined the blood of the patient before and after the operation and proves that the child is not worse off minus that "superficial" structure. In some instances the percentage of hemoglobin was increased after the operation. In the serum of patients suffering from tonsillitis and peritonsillar phlegmon, protective ferments were found, that in Abderhalden's dialyzing test decomposed tonsillar tissue. These anti-tonsillar protective ferments were also met with in people with normal tonsils and were present to some degree in the serum before and after the removal of the tonsils. The writer concludes that the tonsils play no role whatsoever in the metabolism of the body, and ought, therefore, to be removed—the sooner the better. Based upon these facts, eugenic legislation of the future will have to make tonsillar circum-excision compulsory. It is to be hoped that the right to perform this non-sectarian act will be restricted to the rhinologist.

GLOGAU.

**A FEW INTERESTING POINTS IN REGARD TO BRONCHIAL
ASTHMA AND REPORT OF A VERY SEVERE CASE
CURED BY INTRA-NASAL SURGERY.**

DR. WILLIAM T. PATTON, New Orleans.

It is generally accepted that bronchial asthma is a neurotic affection characterized by hyperemia and turgescence of the mucosa of the small bronchial tubes and a peculiar exudate of mucin. The attack may be due to direct irritation of the bronchial mucosa, or may be induced reflexedly by irritation from other parts of body, such as cardiac, renal, stomach, intestinal, genital, uterine, nose or throat and possible eye. Cardiac and renal could be classed as mechanical, due to edema and stasis, or irritative, due to toxemia. It is the writer's opinion that the most common source of reflex irritation is the nose and throat, reflexly involving the pneumo-gastric nerves—such conditions as polypoid or suppurative ethmoiditis, deviated septa, enlarged middle turbinates, pressed upon by the septum and outer wall of the nose, hypertrophied inferior turbinates, diseased tonsils, especially the adhesive type, also lingual tonsils.

The tonsils may act in two ways, by reflex irritation and by causing slow toxemia. Should we not be able to find any trouble, or should the treatment of conditions found not improve the asthma, we are certainly justified in passing the bronchoscope and will often find one or more small ulcers or hyperemic spots in the trachea or bronchial tubes, which should be treated by application of silver, argyrol, glycerite of tannin or whatever seems proper for the condition. It is often wonderful to see the immediate improvement in these cases. Given a case of asthma, the intestinal tract should be carefully studied and treated, then the heart and kidneys should be carefully looked after. If the trouble is not located, the nose and throat should then be carefully examined and any abnormal or diseased condition removed or treated.

The case I am about to report was a most severe and obstinate one and I believe it was only through most careful and untiring nasal treatment that he was cured.

Mr. W. P., age 27, came to me October 30, 1913. He was desperate and had been to all kinds of specialists, including dietician, heart and lung specialist, osteopath and even Christian Scientist, but none gave him any relief and he wondered if his nose could be the cause of the trouble.

He has been suffering from asthma for the past ten years, at times very severe and never entirely free from some wheezing; has lost considerable weight, is not able to attend to business and as he expressed it, was ready to give up. The patient does not smoke and drinks very little.

Examination:—Nose: Septum badly deflected to left and high up, pressing on middle turbinate, deflected to right in lower part, touching hypertrophied inferior turbinate. Pus coming from right ethmoid region. Tonsils submerged but apparently not causing trouble, mucous membranes of pharynx and upper larynx all red; ears apparently normal. Submucous resection advised, to which he willingly consented. Urine shows no indican or other abnormalities; heart, normal; lungs, characteristic signs of asthma.

October 14. Complete removal of septum nasi, under cocain and novocain. October 15. Packing removed, patient passed good night and now wants to go to office. October 16. Nose healing nicely; considerable discharge from right ethmoid region; no headache, patient claims his asthma is better. November 1. Nose has been cleaned and treated every day or so. It is still slightly clogged and pus is still coming from ethmoid region. Right middle turbinate removed in order to give better drainage. Patient claims he is fairly free from asthma.

November 4. Mixed infection phylacogen (2 cc.) given subcutaneously in dorsal region. November 6. Patient had only slight reaction. November 7. Phylacogen (3 cc). November 8. No reaction, 5 cc. given. November 10. Slight reaction, 5 cc. given. November 11. Slight reaction, 5 cc. given. November 13. Slight reaction, 5 cc. given; feeling pretty good, only slight wheezing and nose is clearing up; much less discharge. November 17. Had chest examined by internist; only asthmatic rales found. November 19. Mixed infection and pneumonia phylacogen (5 cc.). Right side of nose blocked and considerable discharge. Did not see patient again until November 29. He claims he has been feeling fine.

November 30. On account of persisting discharge from right side ethmoids curetted. January 9. Patient has been free from asthma up to a few days ago, when he contracted severe cold and his whole head became choked up. Examination of left side showed it to be all clogged up with free discharge; cleansed and treated with argyrol packs; 5 cc. phylacogen. January 12. Intense reaction from last injection; nose much improved and patient feels much better. January 14. Phylacogen (5 cc.). January 16. Phylacogen (7 cc.). January 19. Phylacogen (10 cc.). No reaction and again slight at-

tack of asthma. January 20. Not getting any reaction from 10 cc. phylacogen subcutaneously, decided to give it intravenously; 2 minims in median basilic vein. January 22. Slight reaction, 5 minims in vein. January 23. Slight reaction, 10 minims in vein. Patient slightly better and only slight reaction. January 24, 18 minims in vein. January 26, 40 minims in vein. January 28, 60 minims in vein. January 31, 75 minims in vein, all causing only slight reaction; patient improved after each dose.

I did not see patient again until February 17, when he had very little asthma, but had a very severe laryngitis; could not talk above whisper. Examination reveals arytenoids swollen and red, small ulcer in inter-arytenoid region, both cords red. Examination of smear for T. B., negative; lingual tonsils enlarged and causing irritative cough.

February 17. Has been treated daily, larynx slightly improved, lingual tonsils removed. March 2. Much improved, no asthma. March 7. Patient became overheated, danced all night and contracted another severe cold, nose clogged and discharging freely; 40 minims phylacogen intravenously. March 9, much improved. March 11, 50 minims phylacogen intravenously. March 14. Had quite a reaction from last injection but now feels fine; 20 minims phylacogen intravenously. March 29. Seen several times a week, intra-tracheal injections 10 per cent iodoform in liquid alboline and several doses phylacogen.

May 1. Larynx entirely well and looks normal, feels fine. July 6. Patient feeling fine only occasional cold in head; has good appetite; gaining weight; nose clear, and no discharge nor asthma. October 23. Heard from case only recently. He is feeling fine and happy.

This case is very interesting in that each time asthma appeared there was always some swelling and discharge in the nose, and until nose was cured of all abnormal conditions asthma persisted. Undoubtedly phylacogen was of great value in this case, for we could abort the asthma, if injection was given in time. However, I do not believe it should be used until all sources of irritation are removed, and then it should be pushed to limit and not given up after few doses. In all, the patient received 75 cc. phylacogen subcutaneously in twelve injections; 27 cc. phylacogen intravenously in fourteen injections without alarming reactions. The patient usually had a chilly sensation, pains in head and over body in about an hour, which lasted for several hours. Then he felt fine for several days.

1109 Maison Blanche Building.

**RETRO-PHARYNGEAL ABSCESS WITH RUPTURE, ASPHYX-
IATION AND DEATH FOLLOWING AN ACUTE
ATTACK OF TONSILLITIS.**

DR. C. COULTER CHARLTON, Atlantic City.

R. T., male, aged 8. Family history, negative for tuberculosis and lues. Child's previous health good. Patient developed a mild attack of acute tonsillitis and consulted a physician who administered treatment and advised the parent to bring him back in two or three days, if not improved. Apparently, the child was in good condition the next day, and returned to school. Two weeks later he returned from school one afternoon, playful, cheerful and after eating his dinner, retired for the night. The next morning the child remained home from school, saying that he was feeling sick and weak but complained of nothing definite. About four o'clock in the afternoon the patient was seized with a coughing spell and complained of fullness in the throat. His mother was alarmed and called the family physician. He arrived as the child was taking his last breath. I was also called, but on my arrival, ten minutes after that of the other physician, the patient was dead. The physician reported that the child had died from asphyxiation, but was unable to assign its cause.

On examining the throat, I found a small amount of pinkish, muco-purulent discharge which I mopped out. Upon further examination I discovered a rupture of the mucous membrane in the pharynx, on the right side posteriorly, above the arytenoid. By inserting a bent probe in this opening I found a cavity containing some of the same discharge as was found in throat, but I was unable to make out any necroses.

Most of these cases have been reported in children under a year of age and with a history of trauma, tubercular or luetic involvement.

I think we may learn from this case: (1) how extensive a condition of this type can develop without causing any symptoms or complaint in a child of 8 years; and (2) how a mild attack of acute tonsillitis may be complicated with a serious result like this one.

From the preceding report you see the child's death was caused by asphyxiation due to the ruptured retro-pharyngeal abscess, following a mild attack of acute tonsillitis two weeks previous.

114 South Illinois Avenue.

ELIMINATION OF SPEECH AND VOICE DEFECTS.*

MR. BERNARD CADWALLADER, Cleveland.

Permanent elimination of speech and voice defects, or speech and voice recovery, rests upon perfect co-ordination of the speech and voice apparatus, diaphragmatic breathing and absolute mind-control.

The entire speech and voice machinery of the speech defective is in a state of chaos. Similar to an engine running wild, lacking the guiding, controlling hand, will and mind of the skillful engineer.

Stuttering and stammering—I use this double term advisedly and refer you to my article in the *Cleveland Medical Journal*, December, 1911, presenting in detail the classification of each, and my reasons for so doing,—does not come from malformation of the organs, but from a wrong activity of the organs. Whatever mystery there is about stuttering and stammering comes from a lack of knowledge of physiology and psychology of speech, and also from not knowing just what *are* the wrong conditions, the wrong positions, and the wrong movements during the activity of the organs concerned. In spite of what is claimed to be known of speech, of its visibility, etc., it cannot be seen and we know not for certainty just what takes place during the speech act. The speech machinery in normal activity cannot be seen until some non-interfering way is discovered of illuminating the parts. The laryngoscope in use makes normal speech and even normal phonation impossible, so that it is of little use in solving the problems confronting the speech specialist; for speech defects are caused by the interfering action of certain muscles set into activity by wrong speech concept, or by abnormal or subnormal conditions arising from imperfect co-ordination. It may also be defined as a conflict between the voluntary and involuntary systems—using the word “System” as including the various specific systems as differentiated by medical authorities.

The way a child learns to talk is the way the speech defective must learn to talk, if he is ever to reach permanent normal speech. The brain centers and the nerve centers must be permitted to do their work uninterfered with by any conscious effort on the part of the speech sufferer.

*Read before the Section on Ophthalmology and Oto-Laryngology of the Cleveland Academy of Medicine, September 14, 1914.

Peripheral effort must be stopped: Phonation is just as much an involuntary act as deglutition. If one should set out to control the swallowing of food or drink by attempting to work a particular muscle disconnected from its associate muscles, he would fall into trouble, but his attempt would be no more fruitless and foolish than the attempt of the stutterer and stammerer to control his speaking by a similar effort.

The first step, then, is to form a right speech concept, to *know* definitely and clearly the process of speech control. In none of man's other functions is there greater proof that "mind is master of matter."

From now on, the character of the speech process and habit will be gradually reversed. Mentalizing more and mechanicalizing less.

I have made five divisions to my present plan of elimination: 1. Training speech muscles through sense of touch at speech points of contact. 2. The elimination of the monotone through inflection. 3. Diaphragmatic breath-control to eliminate throat clutch. 4. The short phrase to eliminate rapid continuous speech and to prevent the possibility of talking on a breath exhaust. 5. Permanency of new speech-habits through reading aloud and conversation.

Training speech muscles: Our work of speech reconstruction will begin with letters, then words and afterwards phrases.

I give my pupils each letter of the alphabet to make, so that I may observe how they make them. We find an overwhelming sympathetic muscular activity. For example: In making the "B" (a labial) which should be made with a delicate touch, or meeting of the lips, and the contact broken as quickly as possible, we find the entire power of jaw, lips, tongue and throat involved in its production.

A classification of the consonant is now presented. The linguals, L, N, D, T, S, soft C, made with the tongue—just the tip of the tongue delicately touching the hard palate as near the teeth as possible, with jaw, lips and throat in repose. The labials, M, P, B, W, made with the lips daintily and delicately touching each other, with jaw, tongue and throat in repose. The gutturals, K, Q, G, and hard C, made in throat, with lips, jaw and tongue, maintained in absolute non-activity and repose. The same exacting discipline and training is employed on the dento-labials F and V; Dento-linguals, Th; and aspirate, etc.

From now on, each speech-part involved (in making such classification) must act independently and without sympathetic action of the other parts.

Hitherto the speech defective has been in bondage to the consonants. The vowels have been slighted. In our next progressive step of elimination, the study of words, we shall reverse this. He will now slight the consonants and linger or raise on the vowels. The vowels are the melody or song of the words. In them lie not only the beauty and power of speech, but his safety.

In word-study I introduce one of the most revolutionary factors of elimination, viz: inflection and natural accents of words. When formulating my plan of elimination, I found the more I safe-guarded the pupil's work with symbols or markings of a distinctive character to represent the principles to be used, to simplify the technical phase, the more completely could they concentrate the mind on the sensations of touch of lips, teeth, tongue and throat, etc., thereby increasing the efficiency and quality of the work.

The complicated and numerous markings of the etymologists in emphasis and inflection I found too cumbersome. My classification of words must be as simple as possible. I call the word with one syllable, the inflected word. The word with two or more syllables, the accented word. Over the inflected word, I use a large V, over the accented word an inverted V, and smaller inverted v's one to each syllable. This also develops smoothness and perfection of syllabic development, mentally and in utterance. These help wonderfully in establishing deliberation and poise, and rhythmic flow, eliminating the irregular, jerky, spasmodic banging together of syllables and words, against each other.

People generally would be greatly benefited in their speech if they would take a course of such training and discipline. As a people, we should be ashamed of our speech and our speaking-voices. The same slovenliness, lack of interest and ignorance, would not be tolerated in anything else. George Eliot in commenting on English as spoken, said: "They have a pronunciation that crushes out all color from the vowels, and jams them between jostling consonants." "Language is the tool by which all knowledge is acquired," says Dr. Berle.

Breathing: Full, deep, diaphragmatic breathing is of the utmost importance to the speech defectives. This must be established to relieve the vocal cords of the imposition of breath-control and inevitable throat clutch.

Exercise: Stand erect, chest high and active, while taking in breath, expand at the waist with diaphragmatic muscles, hold the latter tightly while counting 20, slowly increase gradually to 40. The full, tight sensation in the throat at first experienced during this ex-

ercise, will pass away when the diaphragm muscles have become accustomed to their work—leaving the throat free and untrammelled.

The Monotone: Webster's unabridged definition of speech is, "A going up and down in the voice." Perhaps the most common and the largest contributing cause of all speech-defects is the monotone, yet strange to say all of the so-called guaranteed-to-cure systems of stammering schools are based upon this very defect, thereby intensifying the stammerer's condition and making him more helpless and hopeless. He cannot raise above the tone of pitch upon which he starts because of the cramped, fixed condition of the vocal cords; hence the enforced monotone.

The permanency of our new speech-habits is established through reading aloud and conversation. We have several links yet to add before we introduce conversation as the final factor in elimination.

1. Phrase analysis. Where to raise voice; where to rest voice; where to breathe. Speech-figures will be a help in deciding on which words to raise—nouns, verbs, adjectives, etc. For the want of a better term, I refer to this group as mind measurement of phrases. 2. Reading aloud with markings; reading aloud without markings; the necessity for reading aloud.

Hitherto, our principles have been studied separately. Our next step is to blend them in actual speech. To go directly into conversation at this stage would defeat our purpose. The pupil has not become familiar enough with his new speech-principles to allow mental diversion. In reading, the thoughts and words are chosen for him, enabling him to focus his entire mental concentration on his markings. He cannot now go astray. Every phrase will be perfect. This will be continued until smoothness, freedom, poise and confidence are established. Conversation antiphonally will be the beginning of the end.

Treatment of small children: It is altogether unnecessary to allow a small child to drift into a fixed habitual speech-defective condition because it has not reached the reading stage. My plan with 4, 5 and 6 year-olds proves satisfactorily. I work through picture-books and ask them to repeat after me whatever we see, and mark them in a similar way on the large card shown.

I insist, of course, that the mother, (or some one who is with the child at home) comes with the child and thoroughly understands the work to be done at home, so that in her conversations with him she uses whatever instructions may have been given to correct sluggish, awkward or weak muscles, etc., of the tongue, lips or throat.

"Precepts and rules are repulsive to a child, but happy illustration winneth him," says Tupper. To bring about exaggerated use of subnormal conditions, which the majority of small children's conditions are, I give an exercise, the appearance of a game; thus working at the cause unconsciously, through producing sounds rather than speech.

The value of all the practical work lies *not* in the knowledge of it, but in daily application until incorporated into new speech-habits. The question always asked, "How long will it take to cure me permanently?" will depend upon the responsiveness of the abnormal speech-conditions, on the pupil's industry, patience and perseverance. No other branch of pedagogy is compelled to change the habits of from five to fifty years' standing which are becoming daily and hourly more firmly fixed. Add to this difficulty the varied conditions and need of each individual, which demand complete mental concentration of teacher and pupil. *Therefore, treatment not founded upon this individualistic basis with adults must logically fail.*

Inflection: Hitherto, the vowels have been slighted, the consonants made too prominent and exaggerated unnecessarily and disastrously. This will now be reversed. Raise and linger on the vowels; the consonants should be daintily touched and left quickly to get to the vowels, the song and melody of the word. "Take care of the consonants and the vowels will take care of themselves." This will prove to be the most interesting work in the entire therapy of elimination.

Make the strong words carry the meaning and the unimportant words no more than they should have. I refer to the strong words as sense bearers.

This subject is one of the most vital of all. Time forbids further development.

Direct tone work: The three exercises for direct tone cannot be used safely where there is vocal derangement. Such must first be treated with indirect tone work, so delicate and varied in its scope and need it could hardly be presented here. A jack-knife in the hands of a small boy is not a good working-combination. The knowledge to use a tool is of more consequence than the possession of the tool.

The speech-specialist must be a *voice-specialist too*. He must know the principles and experiences of the use and preservation of the singing voice. Without this complete knowledge and experience it is impossible to eliminate all imperfections of voice and speech.

A boy, 11 years of age, came to us recently. He both stammered and stuttered. After a few lessons I discovered his speech trouble was caused by weak vocal cords through mouth-breathing—congenital adenoids. His cords would phonate only through force in the highest register.

The adenoids had been removed one year before. The operating physician insisted the voice and speech-trouble would pass away. The parents wisely saw the boy was gradually becoming worse and needed assistance. Many physicians do not seem to realize that custom and habit are as difficult to fight as disease. After the boy's voice had been made strong by suitable exercises and nose-breathing established it required but a few weeks to change his speech-difficulty through inflection, short phrases and avoidance of talking on exhausted breath.

Larynx: The position of the larynx must not be omitted as a factor in speech-freedom. Its low position will add resonance, good tone, and quality to the voice and prevent crowding the base of the tongue. The efforts of the stutterer and stammerer to speak, have made the up-pulling muscles overwhelmingly strong and the down-pulling too weak to act. In our student days the late Emilio Belari rightly insisted on the position of the larynx as being of the utmost importance to the development of the singing and speaking voice.

So much has been written and said about speech-defects that voice-defects have been overlooked. Weakened vocal cords make inflection, on which so much depends, an impossibility, and the monotone a certainty—and derangement of laryngeal muscles are responsible for much of the trouble which cannot be reached through the articulating machinery.

Temperament: We have hitherto dealt only with the process of defective elimination. It is just as important to take into consideration the individuality and personality, the capacity for mental concentration, and the industry and patience of the stutterer and stammerer. These traits are as varied as the speech-defects and upon the skill and tact used in handling them depends the success as largely as upon the solution of speech problems.

Nervousness is not a cause of speech- and voice-defects, else why should they become self-possessed, calm and confident when speech freedom is gained? Nervousness is a by-product of stuttering and stammering.

Did time permit, I would like to go into detail relative to interesting cases of sub-normal speech- and voice-conditions sent to me re-

cently by Dr. Kerr, Dr. Howard, Dr. Cogan and Dr. Abbott. One of the most remarkable cases I have ever had was the one sent by Dr. Abbott—a young man 17 years of age. A Boston physician and surgeon had told the mother that the boy was born without vocal cords. When I had done all I could for him the young man's brother told me he almost yelled the roof off the Lennox Building while under the influence of an anesthetic. This vocal development had been produced in eight months of daily work.

Lalaphobia: The speech-defective acquires many other defects of speaking and thinking. He may indistinctly and hurriedly develop a weak and husky voice. He may develop so much timidity or bashfulness that he becomes a sadden recluse or a startling combination of verbosity with awful grimaces. His power of attention and his readiness of thought are frequently seriously affected through multiple thought, word substitution and use of synonyms. For each of these defects there are methods of cure as precise and reliable as the melody cure.

In conclusion I cannot say too emphatically that class-work in stammering-schools always ends in failure and disappointment. They teach only tricks of waving hands or arms, snapping fingers and sing-songing the words on a monotone. Permanent speech freedom can be established in every case only through individual study and treatment.

214 Permanent Building.

New, Double Self-retaining Nasal Speculum. MAX UNGER.
Jour. A. M. A., May 16, 1914.

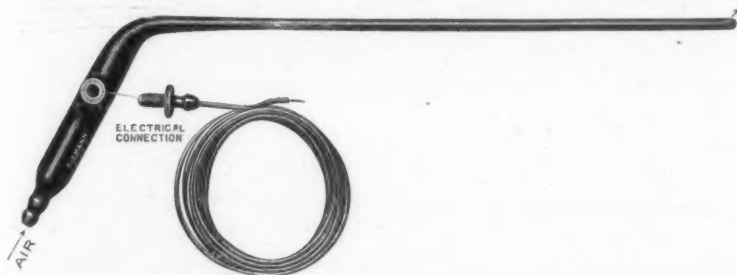
Unger describes and illustrates what he calls an "ideal speculum." It is made of spring wire and consists of two pairs of fenestrated blades, one pair for each nostril. The whole speculum is about 3 inches wide and about $2\frac{1}{2}$ inches high. It is small, simple and complete in dilating both the nostrils at the same time, in staying in place, and in not interfering with the operator. He says that the time of a submucous resection operation is shortened one-quarter by its use.

AN ELECTRODE FOR FULGURATING THE LARYNX.*

DR. SIDNEY YANKAUER, New York City.

When fulgurating the larynx for papilloma certain difficulties are met. If the wire carrying the current comes in contact with the tissues, a short circuit is established and the spark is extinguished. As soon as the current is turned on, however, a spasmodic contraction of the larynx occurs (even when the anesthesia is sufficiently deep to prevent a reflex from ordinary touch) and the spark is extinguished. The spark at best reaches only the surface of the growth.

To overcome these difficulties, the electrode here presented has been devised. It consists of a hard rubber tube bent to form a handle, and of appropriate shape and dimensions to be used conveniently with the direct laryngoscope, or better still with the sus-



pension laryngoscope of Killian. The interior of the tube, from the tip to a point on the handle near the bend, is lined with a metal tube to act as a conductor. The distal end is closed, but near the tip of the instrument a small opening, about 1 mm. in diameter, has been drilled through the hard rubber insulation and through the wall of the metal lining. At a point on the handle near the bend there is a threaded hole and at its bottom a piece of metal in electrical connection with the metal lining. Into this hole, a hard rubber screw is fitted which carries the conducting cord. The electrical conduction extends from the connection near the bend to the bottom of the small hole near the tip; the lumen extends

*Read before the Section on Rhinology and Laryngology of the New York Academy of Medicine, October 28, 1914.

from the end of the handle to the small hole near the tip. To the end of the handle a rubber tube is attached, through which compressed air at a pressure of about fifteen pounds is delivered.

To use the electrode, it is first introduced into the trachea and a small amount of air at a low pressure is blown into the trachea so as to blow out any ether vapor which may be present. The tip is then brought out into the larynx, the full air-pressure turned on first and then the spark. The rubber insulation prevents the tissues from coming in contact with the conductor. The air-current blows away any secretion which may cover the growths and at the same time separates the individual tufts of the papilloma, so that the spark can reach the base of the growths. It dilates the ventricle of the larynx, so that its interior becomes accessible. By rotating the instrument, any part of the larynx can be treated.

I have used the instrument only a few times but I am satisfied that fulguration is more effective when done in this way than by use of the simpler methods.

616 Madison Avenue.

Foreign Bodies of the Upper Air Passages and of the Esophagus.

M. WEINGARTNER. *Ztschr. f. Laryngol.*, Sept., 1914, p. 333.

The writer completes his report of a series of rather rare foreign bodies within the upper air passages and the esophagus by a number of valuable suggestions. A foreign body should be suspected whenever indistinct pulmonary changes, hoarseness or stridor are met with, even in an entirely negative anamnesis. First the larynx should be locally inspected, then a roentgen picture taken, to be followed by bronchoscopy or esophagoscopy. Suspension laryngoscopy should always be resorted to in children, especially when the foreign body is located within the larynx or hypopharynx. In more difficult cases this method should be also used in the adult, as it permits of an easy introduction of the bronchoscopic tube. With the interior of the larynx being continually exposed and with both hands of the operator being free, an emergency tracheotomy may be avoided by introducing into the bronchi a thin rubber tube alongside of the obstruction.

GLOGAU.

NEW, DIRECT-VIEW, SELF-RETAINING LARYNGOSCOPE.

DR. MAX UNGER, New York City.

I beg to submit to the medical profession a new, direct-view, self-retaining laryngoscope.

As seen in Figure 1, the instrument consists of a tongue-blade, a palate-blade, a palate-blade supporter and screws for connecting and manipulating them. The tongue-blade is long and narrow, to reach from the teeth of the lower jaw to the base of the epiglottis, and is fastened at right angles to a handle. The palate-blade, also, is long and narrow and is meant to reach from the hard palate, just back of the teeth, to the cervical vertebrae near the arytenoid cartilages. The ends are suitably shaped to fit the parts. The palate-blade is fastened at its proximal end (C) to the palate-blade supporter. The palate-blade supporter is long and narrow, and its lower end is shaped like a two-pronged fork, with the tines bellying out in the middle to form a space to look through. To the lower ends of the tines (C) is fastened the palate-blade, by hinged joints.

The palate-blade supporter lies flat on the handle of the tongue-blade and by a screw arrangement at A can be made to slide up and down it along its longitudinal axis. Movement of the palate-blade supporter causes the palate-blade to move to or from the tongue-blade. The distal end of the palate-blade can be made to approach or recede from the distal end of the tongue-blade by turning the screw at B, which controls a lever extending from the palate-blade up alongside one of the tines of the fork.

To use this laryngoscope it is necessary to have the patient thoroughly anesthetized, either locally or generally. Use for local anesthesia an equal mixture of 20 per cent cocain and 1-1000 epinephrin. No assistant is needed. After the patient has been anesthetized he is put, face upward, on a table, with his head hanging over its edge. It is best to have the head of the table raised, so that the mouth of the patient is on a level with the physician's eye. This enables the physician to assume a comfortable position and facilitates his work. The laryngoscope is introduced, with the blades together and the handle upright, until the epiglot-

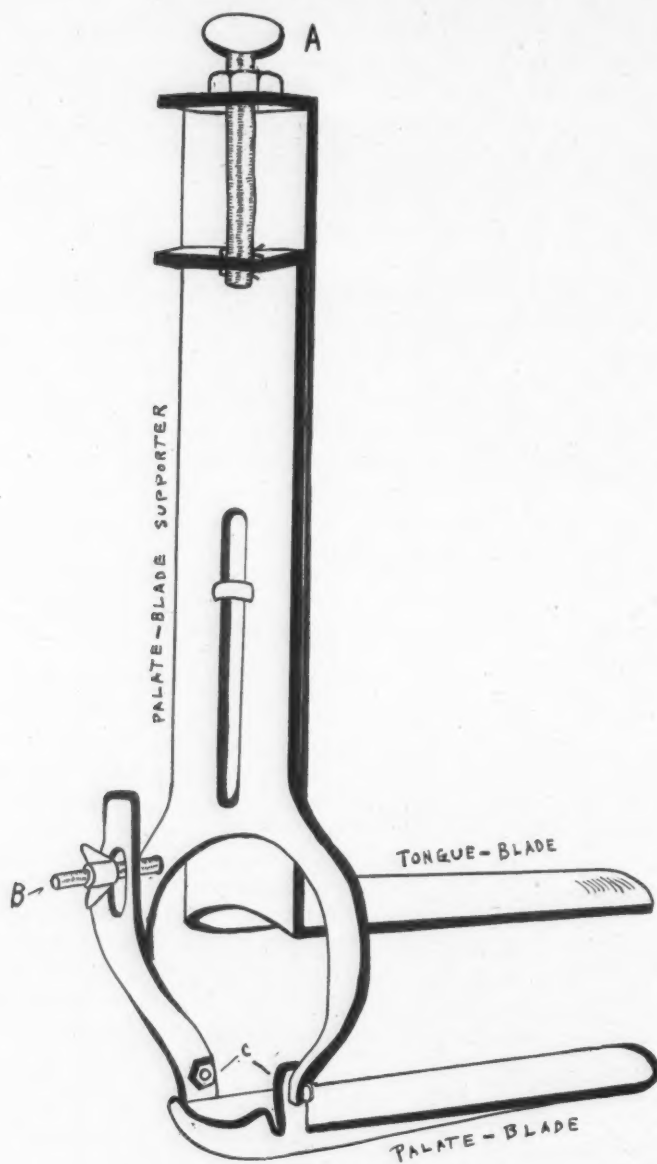


Figure 1.

tis comes into view. The tongue-blade is so manipulated that the epiglottis is caught between the blade and the tongue and is kept out of the field of vision. The arytenoids are then seen and the introduction of the instrument is continued until the proximal end of the palate-blade slips inside the teeth. The relation of the instrument to the anatomy will then be as illustrated in Figure 2.

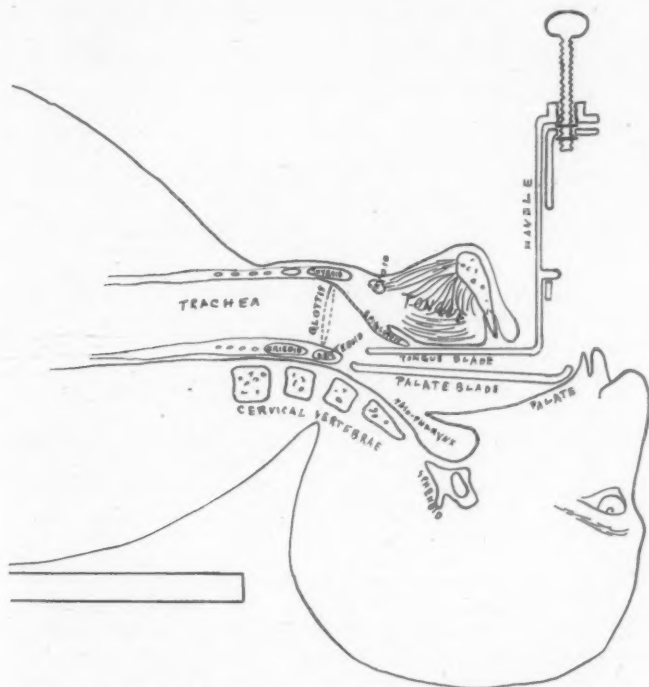


Figure 2. Diagram showing instrument in position with blades approximated and arytenoids in view.

By turning the upper and lower screws, the blades will be pushed apart, the tongue and epiglottis will be forced into the submaxillary regions and the cords will come into view, as seen in Figure 3. Only enough force should be used in turning the screws to fix the instrument in position with moderate firmness. It can then be left without attention and the physician will have both hands free for his operations.

I have used this instrument on eight cases, six of them in Dr. Emil Mayer's clinic, service of Dr. Yankauer, at the Mount Sinai Hospital Dispensary, and two in Dr. Lapat's service at the New York Polyclinic. In all these cases I obtained a complete view of the larynx.

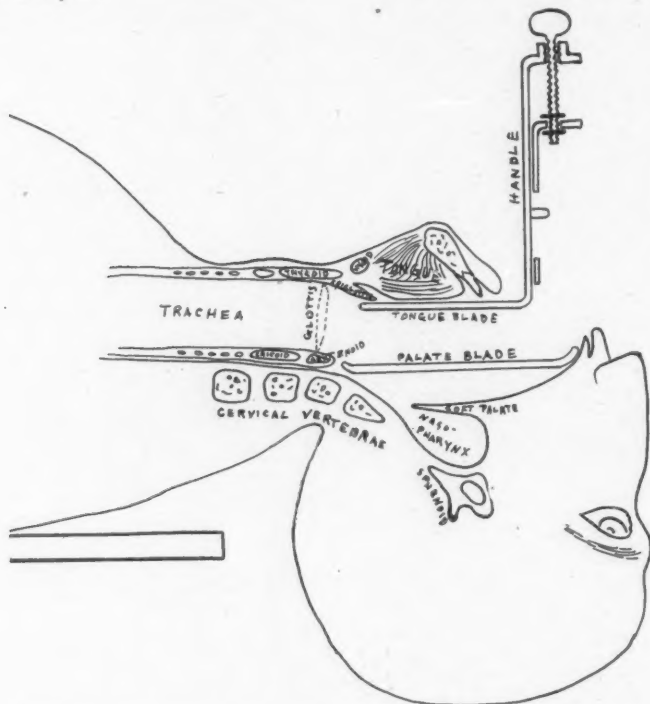


Figure 3. Diagram showing instrument in position with blades separated and cords in view.

In conclusion, I wish to make my acknowledgments to the above gentlemen and to Dr. McDonald, professor of anatomy in Fordham University Medical College.

1045 Fox Street.

SOCIETY PROCEEDINGS.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY,

Twentieth Annual Meeting, Atlantic City, June 19-20, 1914.

JOSEPH A. WHITE, Chairman.

SYMPOSIUM: STENOSIS OF THE ESOPHAGUS.

1. Anatomy, Anomalies, Instruments and Technic. DR. HARRIS P. MOSHER, Boston.

After discussing briefly the comparative anatomy of the esophagus, the essayist considered the esophagus in man under the following subheads: (1) Congenital anomalies, anatomy, structure, lymphatics, position, direction, diameter, length, distensibility, subphrenic portion, movements, appearance of normal esophagus; (2) physiology, function, peristaltic action, respiratory movements, innervation.

He then discussed the contra-indications to esophagoscopy—acute inflammation, as after the swallowing of corrosive fluids, and aneurysm of the aorta. The chief danger in passing the esophagoscope is rupture of the esophagus, which almost always results in infection of the posterior mediastinum and death. Such an accident can be easily avoided by the selection of a tube of the proper size and by adhering to the fundamental axiom of all esophageal examinations, namely, the examining tube must never be advanced unless the eye sees through the tube the open esophagus ahead. It should be remembered also that in old people the esophageal wall may be thin enough to rupture itself, so that smaller tubes and greater care in using them are necessary. It has developed of late years that there is considerable shock from manipulations carried out in the esophagus, more shock than is caused by working in the trachea and bronchi. Children bear esophageal examinations less well than do adults. In poorly nourished patients, particularly in those who are on the point of starvation from the presence of a stricture, it is better practice to open the stomach and feed the patient through a gastric fistula until his resistance has been restored, before attempting any prolonged examination.

The esophagus may be examined under local or general anesthesia, the author being strongly prejudiced in favor of general anesthesia, doing most of his esophageal work with ether.

The laryngologist, on beginning esophageal work, should supply himself with a full set of general and special instruments, the full list of which is given in the paper.

A general physical examination of the patient should be made before esophagostomy is attempted. An x-ray plate is indispensable before many examinations. It shows the location of metallic foreign bodies, pieces of bone, and buttons; it shows enlargements of the arch of the aorta and en-

largement of the mediastinal glands, and, combined with the ingestion of bismuth, it shows the position of strictures, the size and location of diverticula, and the size of the dilated esophagus.

The technic of esophagoscopy under local and under general anesthesia is described in detail.

2. Causes, Symptoms, Pathology, Diagnosis and Treatment. DR. CHEVALIER JACKSON, Pittsburgh.

Stenoses of the esophagus may be classified as inflammatory, neoplastic, compressive, spastic and angio-neurotic.

The inflammatory stenoses may be edematous or cicatricial; the neoplastic, benign or malignant. The compressive may be due to malignancy, benign or inflammatory, or peri-esophageal lesions, or to aneurysm or enlargement of the left auricle. Compression stenosis is also frequently caused by a pulsion diverticulum of the esophagus itself when the pouch is full of blood. Spastic stenoses are usually seen at the cricoid level, due to spasmodic contraction of the inferior constrictors, especially the orbicular fiber, along with the adjacent orbicular fiber of the esophageal wall. The next most frequent spastic stenosis is at the hiatus, the contraction being due to the traction of the diaphragmatic musculature and the small bundles of fibers given off from the diaphragm and attached to the esophagus. Angio-neurotic edema producing severe stenosis of the esophagus has been observed by Arrowsmith.

The etiology varies with the character of the stenosis. Inflammatory stenoses are most frequently caused by swallowing corrosives, but they may be due to stasis of food halted by spasmodic stenosis. Other causes are the traumata of foreign bodies, the mixed infections associated with lues and with tuberculosis of the esophageal wall.

The cause of neoplastic stenoses, like that of neoplasms elsewhere, is unknown. Inflammatory processes and their end-results probably contribute to the etiology by affording a favorable soil.

Spastic stenoses may be local or general. Local stenosis is often the result of a "vicious circle" started by rapid eating, with its associated gulping of large boluses of poorly masticated food, followed by stasis of the food, inflammation and erosion, which, in turn, serve as a source of reflex excitement of more frequent and prolonged spasm, this inflammatory process being thus increased. The general causes of spastic stenosis are dependent upon some basic nerve-disorder, probably more functional than organic.

Pulsion diverticulum, as demonstrated by Killian, is chiefly caused by insufficient support of the esophageal wall between the fundiform and oblique fiber of the inferior constrictor.

Extensive consideration of the symptomatology is useless, inasmuch as any abnormal sensation whatever, referable to the esophagus, is an indication for esophagoscopy, by which, rather than by symptoms, the diagnosis is to be made. An otherwise altogether unaccountable cough, "globus hystericus," and the filling to overflowing of the pyriform sinuses with secretions, are some of the signs which may lead to the diagnosis of esophageal stenosis.

Radiography is of the greatest usefulness in demonstrating the size and extent of dilatation and diverticula, as well as assisting in making the diagnosis of their presence. Fluoroscopy affords very important aid by determining the functional activity of the esophagus during the act of swallowing. Taken alone, however, these means may lead to error.

The bougie, passed blindly, is of no use for diagnostic purposes. The differential diagnosis of lues, tuberculosis, and malignancy is made by exclusion and by biopsy. The other types of stenosis are diagnosed by characteristic signs, which are detailed by the author.

Treatment should never be instituted while the patient is in the condition of water starvation. Enteroclysis or hypodermoclysis should be begun immediately. Immediate gastrostomy by the general surgeon, preferably under local anesthesia, should be performed when the patient has had little or no water for as much as four days.

Edematous inflammatory stenoses are best treated by having the patient swallow small doses of bismuth with a little calomel, both given dry on the tongue.

Cicatricial stenoses, in the author's experience, are best treated by filiform silk-woven bougies passed esophageally.

Benign and endo-esophageal growths are probably readily removable, though they are so rare that accurate data are lacking.

Malignant stenoses of the esophagus are regarded by general surgeons as inoperable. There is reason to hope, however, that, when early diagnosis is possible, transthoracic esophageal resection may be a justifiable procedure.

Spasmodic stenoses are best treated by divulsion. For this the author prefers a mechanical divulsor, such as that of Mosher, passed by sight through the esophagoscope.

The treatment of compressive stenoses obviously depends upon the nature of the compressive mass.

Pulsion diverticula, according to the consensus of opinion, steadily increase in size and severity of symptoms; consequently amputation of the sac by the surgeon, operating through the neck, is indicated. The operation with the esophagoscopic aid, devised by Dr. Otto C. Gaub, has been successfully employed by the author in two cases. This method is described and illustrated with three figures.

DISCUSSION.

DR. ROSS HALL SKILLERN recommended the "Schwebe" laryngoscope, which, with the suspension apparatus, gives a technic as simple as the passing of a naso-pharyngoscope into the nose. With the tongue-depressor and the apparatus for lifting up the larynx the pyriform sinuses and the upper part of the larynx could be shown completely, without lifting the cricoid cartilage entirely. The instrument was fitted with a double light. The tube was passed, as one would pass the naso-pharyngoscope, and slipped down below the cricoid cartilage. By comparing this with the other method, he had found it the simpler. He could see directly into the larynx. Children, as a rule, stood the esophagoscope badly, but under the "Schwebe" or suspension apparatus they would stand it for hours, or as long as necessary. He had had no child, thus far, to "go bad" with the "Schwebe" in position.

DR. SIDNEY YANKAUER recounted an experience with a stricture at the cardiac end of the stomach. The patient had suffered for many years from cardio-spasm, and many attempts had been made to dilate the cardia, all without the slightest effect upon the cardio-spasm. The man was unable to swallow other than liquid food, most of which came back into the mouth. He finally came into the hands of Dr. Willy Meyer, who, in the differential pressure chamber, opened the thorax, found the dilated portion of the esophagus, which he corrected by plicating, but without improvement. The patient was put in the chamber again and an operation similar to Mikulicz's pyloroplasty performed on the cardia through the chest wall. There resulted not the slightest improvement in the swallowing or in the cardio-spasm. Dr. Meyer then turned the patient over to him to see what could be accomplished with the esophagoscope. Upon putting in the instrument, the scar-tissue from the plications could be seen, forming ridges at the antero-lateral portion of the cardia; beyond this, a bend of the lumen was located at the cardia, which it was impossible to pass. The lumen of the cardia was merely a slit. Attempts to pass through this brought so much pressure to bear upon the sides of the esophagus that it was impossible to proceed. To pass and straighten out this tissue was a problem. He made for the purpose a wire probe which consisted of small joints, about a quarter of an inch long, so constructed that it would bend in one direction but could not return beyond a straight line. His idea was to use the curved part to go around the ridge to rotate the instrument and then to pass the straight part into the stomach. After several attempts he finally succeeded in straightening out the ridge and in passing a narrow tube beyond the ridge. He then saw what seemed to be a string coming out from the lumen of the cardia. It proved to be a silk suture from the cardio-plastic operation. Subsequently he found another stitch which he cut and removed. Following the removal of these two stitches the scar tissue softened up considerably, after which the gastroscope could be passed. After this the patient could swallow liquid food without difficulty, and some semi-solid food. He then passed the gastroscope and manipulated the head and shoulders in an effort to loosen up the cicatricial tissue. The patient's condition improved to such an extent that he could swallow gruels and semi-solid foods, but not solid food.

The case illustrated what can be accomplished by the exercise of patience and a certain amount of resourcefulness.

DR. SAMUEL IGLAUER described a procedure employed in the treatment of a case of complete obstruction of the esophagus following typhoid fever, occurring in a boy about 10 years of age. A gastrostomy had been performed, through which the patient had been fed for a number of years. In order to measure the thickness of the obstruction, an olive-tipped bougie was passed from the stomach into the esophagus and another was passed through the mouth and the distance between the two olives was determined by an x-ray picture. The olives were found to be slightly overlapped and about one-sixteenth of an inch apart.

Esophagoscopy both from the oral and the stomach-end of the esophagus failed to reveal any fistulous tract through the obstruction. A few days later, working in conjunction with Dr. Murphy, of Cincinnati, an at-

tempt was made to relieve the obstruction by an original method. An esophagoscope was introduced through the stomach-end of the esophagus and at the same time a second esophagoscope was introduced through the oral end. Both tubes were introduced as far as the obstruction, there being an observer for each instrument. When the light in one instrument was turned out the glow of the light in the other could at times be seen transilluminating the obstruction.

With an electro-cautery an attempt was then made to burn through the transilluminated diaphragm from above. The cautery was followed by a slender bougie which apparently passed through, but digital examination showed the bougie under the mucous membrane in the stomach. The bougie had evidently dissected up the mucosa of the esophagus and passed down into the stomach wall. After a few days the patient was removed from the hospital, contrary to advice. While on the train on his way home he began to swallow naturally and this continued up to the time of his death, which occurred about three weeks after the operation. Evidently the lumen of the esophagus had been restored and if the procedure outlined above were followed more cautiously it would prove more successful.

DR. GEORGE F. COTT added a third condition to the two mentioned by Dr. Mosher in which the esophagoscope could not or should not be passed. He cited a case in which the patient could not swallow, and in whom, under ether, the esophagoscope could not be passed after strenuous efforts for some time. Upon further investigation it was discovered that there was ankylosis of the cervical vertebrae from syphilis.

DR. G. HUDSON-MAKUEEN asked if Coley's fluid (mixed toxins of bacillus prodigiosus and streptococcus erysipelatosus) had been tried in malignant disease of the esophagus. Many cases of marvelous cures have been reported, not only by Coley himself, but by other distinguished surgeons in this country and abroad, and it would seem that, unless there were some contra-indication against its use, it might prove to be quite as efficient, if not more so, than any of the other methods which have been suggested, not excluding radium. He had had the pleasure recently of talking with Dr. Coley about the preparation of the "fluid," and about its use—a work in which he has been engaged for more than twenty years—and he was encouraged to hope that it might be useful in the class of cases under discussion. He would be glad to hear the opinion of the essayists on the subject.

DR. ROBERT LEVY said that the sign of which Dr. Jackson had spoken—the accumulation of secretion in the pyriform sinus—had been observed by him in cases of tuberculosis with painful deglutition. He had seen cases in which these sinuses were completely filled.

DR. R. H. CRAIG suggested the use of the high frequency fulguration-spark in the treatment of inoperable cases of this nature. He cited a case in which the pain absolutely disappeared and the growth was greatly reduced. The patient, however, died six months later. In another case of malignant disease involving the sphenoid and the naso-pharynx, after a month's treatment this disappeared and the growth was much reduced in size. He believes the high frequency fulguration-spark is of great value

in alleviating pain and diminishing the growth in these desperate cases. Where the growth is accessible carbon dioxide snow may be useful.

DR. JOSEPH C. BECK asked Dr. Jackson if he had employed the Abderhalden test for carcinoma. He also asked Dr. Jackson to specify, in closing the discussion, what he meant by "small quantities" of radium. He had employed nineteen milligrams of the salt or ten milligrams of the pure radium element.

DR. MOSHER, in closing the discussion, said Dr. Skillern's remarks interested him. He had tried the procedure of suspension esophagoscopy and had found it satisfactory in the examination of the upper part of the esophagus. He had not had the trouble with the breathing which Dr. Skillern mentioned; in fact, he had been astonished to see how little trouble he had had in this regard. Referring to Dr. Iglauer's case, he said he had reported a case three or four years ago where the same procedure was used. It was a case of absolute stenosis of the esophagus, and he attacked it from above and below. The procedure which helped was that of picking the stricture apart, ballooning, and picking it apart again. In his experience, perforating the esophagus led to fatal mediastinitis.

DR. JACKSON, in closing the discussion, said Dr. Mosher was the highest authority on the anatomy of the esophagus. Dr. Jackson believed that all the early esophagoscopists and many of to-day mistook the hiatal constriction for the cardia. The question of anesthesia was a matter of personal equation. Every man should select the instruments which suit his needs best, and so it is with anesthesia. The method should be selected which suits the operator's needs in the particular case. Personally the speaker had been very much interested in the case reported by Dr. Yankauer. He thought the work of Dr. Yankauer and Dr. Meyer would open a new field. The procedure mentioned by Dr. Iglauer was exceedingly interesting, and while it was a failure in the case cited, it was justifiable in absolutely impervious strictures, and offered hope of success. In co-operating with Dr. Brenneman he had passed a tube to serve as a staff upon which Dr. Brenneman cut the occluding cicatrix from below the externally opened stomach. Such procedures were, of course, indicated only in impermeable occlusion. If any lumen existed, however small, it could be cured by the safer endoscopic methods. Dr. Cott's point was well taken.

Answering Dr. Goldstein's question concerning recurrence of spasmodic stenosis the speaker cited a case of spasmodic stenosis, in which he absolutely failed. He stretched the abdominal esophagus so completely that he could see into the stomach, and yet recurrence took place. This was, however, his only failure so far. The patient became discouraged and finally gave up treatment.

Referring to Dr. Makuen's remarks concerning Coley's fluid, he said the method was applicable to sarcoma, and that it was in this disease that radium also gave best results, carcinoma being less amenable. Both methods could be used in the same patient. He suggested that in the cases of filling of the pyriform sinuses by secretions, mentioned by Dr. Levy, there might possibly be spasm in the crico-pharyngeal muscle causing temporary stenosis with resultant filling of the pyriform sinuses, or, in other instances, a disinclination to swallow because of the odynophagia

which might exist. Or, in still other instances, an actual organic esophageal stenosis due to tuberculous infiltration of the "party wall" might be present. Nevertheless, Dr. Levy's point was well taken. Dr. Jackson hoped that fulguration and carbon dioxid snow would be thoroughly tried out, but he had had no experience with either. He had not employed the Abderhalden test, as suggested by Dr. Beck, but all diagnostic methods should be used. With reference to the dosage of radium, he said a small dose, such as ten milligrams, acts as an irritant, because it cannot be left long enough in the esophagus. A hundred milligrams left in for an hour or more was usually required. He did not speak as an authority; he depended upon Dr. W. H. Cameron and Dr. William Proescher for dosage and duration of the radium application in each particular case.

Suspension Laryngoscope in Children. DR. ROBERT LEVY, Denver.

Published in full in the November, 1914, issue of THE LARYNGOSCOPE, p. 936.

DISCUSSION.

DR. SIDNEY YANKAUER agreed with all Dr. Levy said concerning suspension laryngoscopy. He has performed a number of operations with this apparatus, one of which he reported before the Eastern Section of this Society. After several operations by the general surgeons, the patient's neck was so scarred that the lumen of the larynx was so small that he could hardly get a probe through. The arytenoids were so adherent to the epiglottis that by the ordinary direct methods the lumen could not be seen, but with suspension laryngoscopy this could be accomplished. The passage of the first probe was followed by a larger, and finally he could pass a uterine dilator. By means of the uterine dilator he could stretch the larynx sufficiently to get a rubber tube in, which was left *in situ* for two weeks, when a larger one was used. It was thus possible, finally, to introduce the intubation tube. The boy is now going about, and has been wearing the intubation tube for about four months. The suspension laryngoscope had been modified by Killian himself as well as by others. The new model which Killian has brought out does not appear as useful as the original model. He has not been able to bring the anterior commissure into view with the new device.

DR. SAMUEL IGLAUER was interested in Dr. Levy's remarks, and agreed with practically every point. While it is true that the procedure is less difficult in children, it can be carried out satisfactorily in adults. In bringing the anterior commissure into view, one should use counter-pressure with Albrecht's instrument, or the finger. Killian recommends a dose of codein preliminary to the anesthetic, in children. He has frequently followed this suggestion. Atropin should be used with ether in order to dry up the secretions.

He has tried tonsil removal under suspension, but thinks the Beck method far superior and much simpler than that of Killian. Referring to the removal of a broken safety-pin from the larynx of the child, 5 years of age, he really did not completely suspend the patient. He introduced the spatula and while supporting the spatula (and thus the patient's head) with his left hand, he could see the foreign body and remove it immediately with the forceps in his right hand. He has recently intro-

duced radium into the larynx in the treatment of a papilloma in a young child. In another infant radium was applied to the outside of the larynx. He does not know the dosage because he did not own the radium.

DR. THOMAS J. HARRIS confirmed what Dr. Levy had said with reference to the simplicity of the method in children and the wonderful view of the larynx obtained in the average case. He referred briefly to a case in which he applied radium in a child, 6 years of age, using the suspension apparatus, with rectal anesthesia, one hundred milligrams of radium, of one million activity, being applied for twenty minutes. The first time he attempted to apply the radium, without the suspension apparatus, he thought it went into the esophagus instead of into the larynx. When the apparatus was employed it was very much easier to see the papilloma and to make the application of radium. He recommended the use of rectal anesthesia in these cases.

DR. LEVY, in closing the discussion, said that he had not found the report of Dr. Yankauer's case in his search for all cases to date in which suspension laryngoscopy had been employed in children. He thought the old Killian method of suspension apparatus better in children, but in adults he liked the Albrecht or Howorth modification. He had used cocaine in adults, but in children he used general anesthesia. Morphine and hyoscin in cases in which a large percentage of cocaine did not seem to abolish the laryngeal reflex were useful in adults. He has never been able to see why adrenalin was added to the cocaine, inasmuch as it is not an anesthetic and as there is very little loss of blood in these cases. In some cases of children with chloroform anesthesia, the adductors contracted, the vocal bands came together, and the spasm of the larynx continued for some time. In such cases a dilute solution of cocaine was of advantage.

The Clinical Significance of Bacteremia. DR. JOHN E. SHEPPARD, Brooklyn.

Four cases are reported, which seemed to the author to be fairly illustrative of a considerable series of cases encountered at the Jewish Hospital in Brooklyn. The four cases and others of the group from which these were selected, would appear to demonstrate that not all cases of otitic bacteremia need operation. To distinguish between cases which do and those which do not require operation calls for one's closest observation and best judgment.

As aids, all too meager at times it is true, in coming to a conclusion as to whether or not to operate, the author suggests the following points:

- (1) The general condition and appearance of the patient. Is there a markedly septic condition? Is it increasing or decreasing? As of the greatest aid in determining this, (2) The temperature curve. (3) Whether the process is localizing or tending to become general. (4) Blood counts, frequent enough to keep a careful line on the patient's resisting power. (5) Blood cultures, sufficiently often to have a definite knowledge of the persistence of the organism in the blood, and whether the number of colonies per cubic centimeter is increasing or diminishing, thus showing whether or not the patient is in need of assistance in taking care of the bacteremia.

DISCUSSION.

DR. ARTHUR B. DUEL thought the interesting reports of Dr. Sheppard served to emphasize certain principles in infectious processes which were of great clinical importance. It must be evident that in all infections the general clinical symptoms usually noted are the result of the action of bacteria or their products which have been poured into the circulation. When the general clinical manifestations are slight, the infecting focus is confined to an unfavorable locality for getting into the circulation, or the invading organism is slightly virulent. Thus, a follicular tonsillitis of streptococcal origin will produce much more violent manifestations than a streptococcal otitis or mastoiditis. Similarly, a staphylococcal follicular tonsillitis, being, in a favorable field for pouring its products into the circulation, may cause considerable general upset (though comparatively less than its more virulent cousins), while, confined to a bony cavity, it may cause hardly enough disturbance to be recognized. Whatever manifestation there may be, however, is undoubtedly caused by the bacterial invasion of the circulation. It may be asked, then, why bacteremia is not always demonstrable in suppurative conditions. The answer is two-fold. In the first place, the methods of examination are not sufficiently delicate; in the second place, most of the organisms are destroyed almost immediately by the blood cells. Only a few of the most virulent type are able to live and multiply in the circulation.

Is a demonstrated bacteremia, then, of no value as an operative indication? Of course it may be of the greatest value. In a case, for example, in which bacteremia is demonstrated, where the blood count shows a low resistance, and where the patient is doing badly, the obvious thing to do is to localize the process—to cut off the blood stream at that point without regard to whether or not there is a demonstrable disintegrating clot. In fact, in his opinion, to look upon bacteremia alone in suppurative otitis or mastoiditis as indicative of septic sinus thrombosis is unwarranted. The bacteremia always precedes the clot-formation—indeed, the alteration of the vessel wall by bacterial invasion is essential to the formation of the clot. At this stage it may not be always demonstrable by present methods, but theoretically it is present, and if methods of investigation were nice enough, it might possibly be demonstrated a day before, or, perhaps, a week before, a recognizable clot has formed.

Of course, after the clot has formed and has begun to disintegrate, the chance of demonstrating a bacteremia is much greater, because the infecting focus is in the most favorable situation for the constant discharge of large numbers of organisms into the circulation. Yet, with a patient doing badly, one might feel quite justified in isolating the infecting area, whether bacteremia could or could not be shown. On the other hand, with the patient doing very well, the demonstration of a bacteremia might not necessarily demand an operation. Hundreds, of course, recover every year without it having been thought necessary to demonstrate the bacteremia, which is undoubtedly present. One should carefully avoid taking too narrow a view of the clinical significance of bacteremia.

DR. CHARLES W. RICHARDSON considered the demonstration of bacteremia an important point in the history of all cases of probable sinus infection.

Whether a positive bacteremia is always indicative of sinus thrombosis is a question still subject to considerable dispute. In cases on the borderline, as it were, the condition of the blood is of much value to the clinician, and should be of great assistance in deciding whether operative intervention is demanded. Without clear and definite indications from a clinical point of view there is no doubt that many would be loath to go into the sinus, although the experiences of Grünings and others seem to demonstrate that in cases of simple bacteremia, without very pronounced clinical symptoms, there may be sinus thrombosis. How far one would be warranted, with the evidence of bacteremia and without clinical evidences of sinus thrombosis, in delaying operative intervention is a question. With bacteremia, even without clinical evidence, he would be loath to delay. Dr. Sheppard's cases were almost negative, in a certain sense, especially his non-operative cases, in which he was fortunate, in that they recovered without operative intervention.

DR. SEYMOUR OPPENHEIMER was under the impression that Dr. Duel and his confreres at the Manhattan Eye and Ear Hospital were no longer at variance with Dr. Libman and Dr. Celler and others at the Mount Sinai Hospital, with reference to this question of bacteremia. At Mount Sinai it was held that acute otitis *per se* never caused bacteremia, and these views had been corroborated by the clinical findings. This difference of opinion was thought to be largely a matter of variance in laboratory technique, the fact that the Manhattan Eye and Ear Hospital reached different conclusions being considered at Mount Sinai to be due to some error in laboratory technique. He and his associates at the latter institution had not changed their view-point at all, being still of the opinion that suppurative otitis *per se* does not cause bacteremia. They were also of the opinion that demonstrable bacteremia is a clinical expression of sinus thrombosis. Up to the present time, they had from ninety to ninety-five cases of sinus thrombosis in which bacteremia had been demonstrated in advance of operation, and in not one case had the operation failed to demonstrate sinus thrombosis. It was a curious fact that if they were wrong in their deductions, they were able to demonstrate conclusively, a few hours after operation, that the blood culture became sterile, showing that the operative procedure must have attacked some local focus which was responsible for the infection. In two hours, in some instances, the blood had become sterile. In some cases the blood culture still remained positive, but there were other explanations, such as vegetations on the heart valves secondary to the initial infection.

DR. S. MACCUEEN SMITH asked Dr. Oppenheimer whether he depended upon the blood cultures for indications for operation, or whether he was guided by other symptoms of the disease.

DR. WILLIAM B. CHAMBERLAIN said he understood Dr. Sheppard to say that he opened the lateral sinus but made no mention of ligating the jugular. He could see no reason, under the circumstances, for not immediately ligating the jugular.

DR. EWING W. DAY called attention to one point that seemed to have been overlooked. There is a tendency to take for granted that every lateral sinus patient, unless operated upon, dies. If a patient with thrombosis gets well it is no indication that the sinus is not blocked. He has

had cases in which the sinus was completely obliterated by clot, and he can not say that if the patient gets well there is no clot.

DR. OPPENHEIMER, continuing the discussion, in answer to Dr. Smith's question, said that he had been particularly cautious, by reason of these controversies, not to be too enthusiastic. Many cases had been admitted to the hospital with but fewest of otitic symptoms, with suggestions of typhoid fever possibly, with no symptoms of mastoiditis, but with a positive blood culture. He had been extremely cautious in saying that he was dealing with infectious phlebitis, and had deferred operating until all other possible causes had been ruled out. Invariably they had found a thrombotic condition in the sinus.

Answering a question by Dr. George L. Richards as to whether all his ninety or ninety-five cases were operated upon, he said they were.

DR. WENDELL C. PHILLIPS verified Dr. Day's statements. He had been struck, years ago, in operative surgery on the ear, to find occasionally an obliterated sinus from an old sinus thrombosis.

DR. JOHN A. THOMPSON recalled having treated a brother laryngologist for suppurative ethmoiditis. He developed an abscess in the big toe which was opened under antiseptic precautions, and examination of the pus revealed the presence of streptococci. The nasal sinuses are sometimes at fault in bacteremia.

DR. SHEPPARD, in closing the discussion, said he simply reported four cases as a part of a group of cases of bacteremia, many of the group being cases which had been operated upon. Regarding the tying of the jugular, he had rather settled down to the rules of not tying it if there is a reasonably good return-flow from the bulb. Should there be no return flow he waited a day or two and then tied off the jugular. It was probably true, as Dr. Richardson suggested, that he was fortunate in not having had results. Possibly more than simple good fortune is indicated by the fact that the cases referred to were selected from perhaps fifty or more cases of bacteremia, of which he had kept careful records, and of which twenty-five at least had not been operated upon. Dr. Thompson referred to other sources of bacteremia. This fact needs to be kept in mind. He very decidedly does not advocate operating upon all cases of bacteremia. Dr. Oppenheimer spoke of his cases as being cases of suppurative otitis. Three of the cases reported in the paper were non-suppurative otitis. He questions the necessity of operating upon all these cases if they are properly watched, especially if in conjunction with a practical bacteriologist. He thinks that more extensive observations would ultimately teach in which cases to operate and in which surgical intervention is not necessary.

Treatment of Purulent Cerebrospinal Meningitis. DR. WILLIAM SOHIER

BRYANT, New York. The object of this communication is to apply the experience of an unusually successful case to the management of this infection.

The treatment of purulent septic meningitis consists of (1) treatment for relief of the intra-cranial pressure; (2) treatment of the toxemia; (3) treatment of the focal infection. The goal of the treatment is the control of intra-cranial pressure and toxemia, and the treatment should, there-

fore, be symptomatically directed against these two means of fatal terminations of the disease.

The following case, showing recovery from purulent streptococcic cerebrospinal meningitis, was offered: The patient, male, 22 years of age, had symptoms of rapidly increasing coma, neuro-muscular signs of meningitis, rigidity of neck, choked discs, and purulent otitis media and mastoiditis. Temperature, 102.5°; pulse, 40. Spinal fluid contained cocci in pairs and short chains, and pus. Decompression at once removed the mental symptoms. Mastoid operation, hypodermoclysis, enemata, saline solution by mouth, and solution of magnesium sulphate by mouth. On the seventh day following decompression, all signs of meningitis had disappeared. Patient died 188 days after the decompression operation, from toxemia caused by the repeated secondary infection of the decompression wound.

From this case the following conclusions are reached: "The combination of our experiences as otologists with the experience of the obstetrician makes the outlook for successful treatment of streptococcic meningitis appear much brighter than it has previously appeared. Oto-laryngologists should get as good results in cerebrospinal meningitis as the obstetrician obtains with puerperal sepsis cases. Although the surgeon can readily protect the patient from death by intra-cranial pressure, the management of the sepsis is quite another problem. This problem of sepsis has received more attention from the obstetrician than from any other medical group or specialty. The treatment should be focused on decompression, local and systemic drainage, administration of magnesium sulphate, and stimulating general hygiene."

Observation of Nystagmus Through the Closed Eyelids. DR. EDMUND PRINCE FOWLER, New York City.

Published in full in the August, 1914, issue of THE LARYNGOSCOPE, p. 730.

DISCUSSION.

DR. ARTHUR B. DUEL thought Dr. Fowler had presented a very ingenious method of making permanent records of ocular phenomena in vestibular nystagmus. He did not think such observations necessary to diagnosis, but when the apparatus was perfected the records, for those who understood them, would be useful in reporting cases. The tracings of nystagmus would leave no doubt of its presence. When one must depend upon the house-staff to report cases that arrived during one's absence, these tracings could be made and put into the records for subsequent study.

DR. FOWLER, in closing the discussion, said patients did not notice as much vertigo with rotation or following caloric reactions with the eyelids closed as they did with them open. For instance, one could produce nystagmic movements of the eyes with caloric stimulations and stop before the vertigo came on. Irrigation usually makes patients deathly ill and it surely is a great advantage to be able to avoid this annoying feature of the labyrinth tests. In many neurasthenics the rotation tests show nothing on account of the incessant blinking and rolling of the eyes around and about. If the lids are closed some approximation of the duration of the nystagmus may be ascertained.

SYMPOSIUM.

AURAL COMPLICATIONS OF THE EXANTHEMATA.

1. Etiology, Diagnosis and Treatment. DR. CHARLES R. C. BORDEN, Boston.

Published in full in the September issue of THE LARYNGOSCOPE, p. 773.

2. The Etiology, Diagnosis and Treatment of the Aural Complications of the Exanthemata. DR. STANTON A. FRIEDBERG, Chicago.

Published in full in the September, 1914, issue of THE LARYNGOSCOPE, p. 783.

DISCUSSION.

DR. HENRY O. REIK considered the papers of Dr. Borden and Dr. Friedberg as two of the most important presented before the society for some time. He congratulated the authors upon the very complete manner in which they covered the subject, the complete way in which they had digested the various facts, and the conclusions which they had brought out. He thought the matter might well be brought more closely to the attention of the general physician, and he hoped each author would take it upon himself to force it home to those who have charge of infectious disease hospitals. Dr. Friedberg had called attention to the importance of this in referring to the frequency with which aural infection takes place in infectious diseases. Dr. Reik had recently observed, in one large hospital in which four hundred beds were allotted to diphtheria and scarlet fever, that practically no attention was paid to the middle ear. Tympanotomy was rarely performed, and the ears rarely examined, the attendant waiting until the child complained of pain. Practically one-third of all the cases had spontaneous perforation and otorrhea, and a large percentage of these went out of the hospital with discharging ears. The number of complications which resulted could not be estimated in figures.

In a similar hospital in Baltimore the same conditions pertained in 1912. With the advent of a new superintendent in 1913 the situation was changed. An otoscopic examination was made in every case admitted, and three examinations daily after admission, one in the morning, one at four o'clock, and one at night. Thirty-seven patients had developed some indication of otitis media. The examiner was very keen to observe this condition, and if there were any doubt as to the need of paracentesis he would operate. Each one of the thirty-seven had tympanotomy, and each child was dismissed with dry ears. In 191 cases of scarlet fever every patient went out without otorrhea. That showed what could be done with careful observation and examination.

Dr. Borden referred to mastoiditis without tenderness. The speaker called attention, in this connection, to the fact that there is an instrument for measuring the presence and amount of tenderness, or rather the amount of pressure necessary to elicit tenderness, which is much more accurate than measuring it with the thumb and finger. This algometer is a very simple device consisting of a rod working in a cylinder, with a spring arrangement for measuring grams of pressure. This apparatus can be placed directly over the antrum or over the tip

cells. With this instrument it is often possible to elicit tenderness which the thumb and finger do not detect.

DR. JOSEPH C. BECK said he stayed away from these cases as much as possible. In Cook County Hospital, in Chicago, this class of patients are greatly neglected because men who were able to take proper care of them do not like to treat them. This is because of the danger of carrying the infection. He has had this experience in his own family, infecting his own child after treating a hospital patient. He can say definitely that there was no other exposure in this case.

Every large hospital should have a contagious ward, in charge of physicians and nurses specifically trained for these diseases. Attending physicians should be called only when absolutely necessary. Another point to which he wished to refer is the matter of operating upon the naso-pharynx and tonsil while the patient is still in the hospital. He has seen a large group of cases operated upon with excellent results, particularly with reference to recovery from the nephritis which is going on without typical findings in the urine or other manifestations elsewhere in the body. In a large hospital where operations can be performed under the most advantageous circumstances, especially with reference to the anesthetic, very satisfactory results can be obtained. The open method of anesthesia is a distinct advance. With reference to post-mortem changes in the ear, Bezold's latest statistics showed that these changes are post-mortem, unless the autopsy is very promptly made.

DR. J. S. KIRKENDALL asked Dr. Borden how he dared to give one of these patients ether after kidney complications.

DR. WILLIAM B. CHAMBERLIN considered the papers presented by Dr. Borden and Dr. Friedberg very important. He mentioned a case of aural complications of scarlet fever which had come under his observation during the winter. The patient was a man, 35 years of age, whose drum membrane had ruptured spontaneously without premonitory symptoms. He was still in bed, the scarlet fever infection having almost spent itself. There was still a profuse discharge from the ear, but no signs of mastoiditis. One morning the nurse noticed a swelling behind the ear. He operated, finding the most extensive mastoid process he had ever seen; every cell was filled with pus and granulation-tissue. He called attention to the value of the x-ray in making a diagnosis in the class of cases under discussion. Dr. Ingersoll and he, at the Lakeside Hospital, had x-ray examinations made in all cases. In chronic cases he did not rely so much upon it, but in acute cases it was of the greatest value. In questionable cases he thought the simple mastoid operation would do no harm, if there proved to be no mastoid involvement, and was attended with little danger. Should there be mastoid involvement, failure to operate would do great harm.

DR. A. P. VOISLAWSKY asked if the essayists were able to stop the aural discharge. He had had a great deal of trouble in having to keep children week after week on account of his inability to check the otorrhea.

DR. GEORGE M. COATES referred to the value of vaccine therapy in the management of the conditions under discussion. He called attention to

a report of McKernon, made to the society in 1910, in which he stated that by the use of autogenous vaccines in cases of mastoiditis following measles and scarlet fever upon which he had operated, the time for wound-healing, which is usually much prolonged in these cases, was reduced to the normal. A report of Weston and Kolmer, in 1911, shows the results of one hundred cases of suppurative otitis media (scarlatinal) treated with autogenous vaccine. Their work was done in the Philadelphia Hospital for Contagious Diseases. Under old methods of treatment, according to the histories of many hundreds of cases, it was found that the percentage of dry ears obtained under thirty days was only 7.46. With the use of bacterins this was increased to 22.9, which is a considerable gain and a fair index of the value of bacterins in this class of cases. Undoubtedly more dependence will be placed on this method in the future.

DR. DUNBAR ROY agreed with Dr. Borden with reference to the irrigation of the nasal chambers in exanthematous conditions, believing that it produced more irritation and gave rise to more possibility of infection of the middle ear than if left alone. In the later stages, when the discharge was very thick and muco-purulent secretion came from the lateral sinuses, it was sometimes pitiful to see young children trying to get air through the nasal passages. As long as the secretion existed it rendered them more liable to infection of the middle ear. In such cases he used a small rubber tube with a bulb at one end. By inserting the free end of the tube into the nasal passage of one side and blowing air through it he found it possible to blow through the opposite side large quantities of secretion. The secretion was thus prevented from going up into the Eustachian tube. The child was rendered much more comfortable by clearing out the nasal chambers in this way.

DR. H. HOLBROOK CURTIS said it would be better to suck the secretion out than to blow it up in the manner described by Dr. Roy.

DR. TALBOT R. CHAMBERS spoke favorably of the Yankauer nasal speculum, through which he had relieved the discharge in a number of cases of Eustachian catarrh, by means of iodine applications.

DR. NORVAL H. PIERCE emphasized the importance of early paracentesis in these cases. It was absolutely necessary to resort to paracentesis early in order to prevent mastoid bone complications. If one remembers the anatomy of the regions involved,—the aditus, the cavum, the pneumatic spaces, all communicating by minute tubes with the antrum, it will be easy to see that paracentesis can prevent involvement of the mastoid bone only when done early. At the very inception of otitis media the infection spread immediately down these tubes, and unless the paracentesis be done at a point in the course of the disease before the mucosa of the tubes swells, one will be unable to draw off the infectious material by capillary drain or otherwise, and it will dam up in the pneumatic spaces. The muco-periosteum, as is well known, has the power of swelling enormously, no other tissue in the body having this power to an equal extent, nor of exercising it so suddenly. In twenty-four hours it can swell sufficiently to fill a large pneumatic space. Paracentesis, therefore, does most good when performed early. It is the

retention of discharge and the swelling of the muco-periosteum that produces decalcification of the bone and consequent mastoid involvement.

DR. THOMAS J. HARRIS thought this symposium one of the most important that had come before the society in many years. He regretted that the general practitioner could not have joined in the discussion. He asked the essayists, in closing the discussion, to speak particularly of the prevention of the complete destruction of hearing following the exanthemata. Milligan, of Manchester, had advocated the mastoid operation of post-auricular drainage in these cases.

DR. FRANCIS P. EMERSON advocated frequent inspection and, if in doubt, incision of the drum. He cited a case in which the patient, when first seen, had no other symptom than fever. He decided to wait, and four hours later the drum ruptured spontaneously.

DR. FRIEDBERG, in closing the discussion, maintained that the majority of acute otitis cases would recover if properly handled. The result depended largely, as Dr. Borden had said, upon the virulence of the infection and the vitality of the patient, but ordinarily the percentage of recoveries was large. In the series reported there were two cases out of thirty-five dismissed from the hospital with discharging ears. This showed what could be done by proper attention.

The Operative Treatment of Meningitis. Supplementary Report and Analysis of Cases. DR. SAMUEL KOPETZKY, New York City.

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DISCUSSION.

DR. EWING W. DAY thought the only thing that had been accomplished so far by the work under discussion was to overthrow some of the existing theories. Cushing's theory to the effect that death is caused by pressure and that if the pressure is eliminated the disease can be overcome has been entirely overthrown. The cerebral circulation is not sufficiently well known for one to understand the matter. The work of Leonard Hill, of London, on the circulation is important in this connection. The easiest and most direct tract is through and down the posterior part of the brain. The place where the maximum amount of pus is found in all his post-mortems is back of the optic chiasm in the region of the cistern of the chiasm. He has thought that there are probably some places where the circulation is very sluggish, and that around the cisterna, back of the chiasm, where it supports the medulla, the circulation probably moves considerably more slowly than it does in other portions of the brain. It is in such places that pus is found in quantities sufficient to amount to an abscess. It seems to be demonstrated that the space in front of the medulla can not be drained. That seems not to be affected by drainage. He believes that Dr. Kopetzky is right when he says that there is sepsis going on in all cases of meningitis. Almost all the cases, following drainage, run a markedly septic course, with daily variations in the temperature, ranging from normal to 104°. In one case sinus thrombosis was suspected and the sinus was opened with negative results. In some cases the disease ran a typical septic course, the patient going off into coma, as in advanced typhoid, with muscular relax-

ation, loss of control of sphincters, dilation of the pupils, and gradually going off into death. This was not the course in all instances, but in the majority.

Referring to the case cited in Dr. Bryant's paper, in which streptococcus serum was used, the speaker said all the symptoms of meningitis were present, yet the patient recovered. He did not believe the treatment had any effect in producing a cure—he thought Nature did it. He does not believe there is any known agent or method which will cure an active meningitis.

DISCUSSION.

DR. FRANCIS P. EMERSON emphasized the fact that two principles are to be observed in the surgical relief of any septic affection: 1. The establishment of adequate drainage. 2. The removal, as far as possible, of the diseased focal areas. The second problem in the surgical treatment of meningitis was impossible. With regard to the first, it was important to establish drainage early in the course of the disease, before the toxemia and sepsis have lowered the vitality of the patient. Theoretically it might be better to relieve the pressure by reversing the lymph current. He thought a study of the autopsy-findings would cause one to hesitate about operating upon any case, especially those similar to the admirable group which Dr. Day presented last year before this society.

Some cases have recovered without surgical intervention and others have been cured by operative treatment. In the former class of cases the cerebro-spinal fluid was sterile. The question of diagnosis with reference to deciding whether or not to operate is important. The symptoms which lead to the clinical diagnosis of meningitis do not indicate whether one as to deal with a circumscribed or a diffuse meningitis. Even should an active organism be found in the cerebro-spinal fluid it would be necessary to cultivate it before a decision could be reached as to its virulence. Dr. Kopetzky's work, therefore, is important in stimulating renewed interest in the subject, that there may be more exact data for operative interference. His personal feeling, however, is that, so far as relief from surgery is concerned, sufficient advance has not been made in securing such data and the results from surgery have not been sufficiently satisfactory to warrant the advocacy of any particular line of operative intervention.

DR. J. S. KIRKENDALL had been interested recently in the report of a case from a young physician in Ithaca who is well versed in pediatrics. Dr. W. L. Van Pelt told him that a young child had tuberculous meningitis soon after its birth, its weight being only nine pounds. He gave this infant twenty-five grains of urotropin daily and the child recovered.

DR. WENDELL C. PHILLIPS was interested in the case mentioned by Dr. Kirkendall, and asked if the cerebro-spinal fluid was examined.

In Dr. Bryant's paper, descriptive of a case of purulent meningitis, the essayist had mentioned that the patient had a pulse-rate of forty. A pulse-rate of forty, has never been observed by Dr. Phillips in an uncomplicated case of purulent meningitis.

DR. JOSEPH C. BECK has always understood that the pneumococcus was the least virulent of the organisms found in meningitis, and thinks that in his case of meningitis which recovered this organism was present.

He has been working along this line for a number of years and has had two cases within the last year in which he operated by the Haynes method. Both patients died, but he learned a good deal from them. In one case of cerebro-spinal meningitis he gave urotropin, in doses of 180 grains a day, then withdrew 10 cc. of blood and allowed it to settle to form a serum, which he drew off, centrifuged it and injected 4 cc. intraspinally, as suggested by Swift and Ellis, with salvarsan in syphilis. The result was that he had a very irritable patient, with a very clear mind, for three days, but the man died just the same. In another case he used collargol intravenously. There was a distinct change in the fundus of the eye in the form of a pigmentation.

DR. DAY said he was asked by one of the surgeons why he did not drain the space in front of the medulla. He did that in one case, placing the drain underneath the dura, passing it up to the cisterna, back of the chiasm, in front of the medulla. The patient went on to death just the same. He had to go inside the dura, and the cerebellum was crowded up, cutting off the drainage. The only other possibility was to put in a lead tube.

DR. THOMAS J. HARRIS said Dr. Bryant had closed his paper by expressing hope for the class of cases under discussion, and yet cited only one case in which there was recovery. From a careful study of the literature it was the speaker's opinion that many such cases have been reported. One should be encouraged by well-authenticated cases which recover. One or two cases have been reported in New York which, he felt perfectly sure, were cured. The Germans made their diagnosis upon the findings in the cerebro-spinal fluid, pronouncing the case one of meningitis when the meningococcus was found in the fluid. One German clinic had reported forty cases of cured recurrent meningitis. This should be encouraging to all who are working along these lines.

DR. SAMUEL IGLAUER called attention to the importance of some experimental work on the circulation of the cerebro-spinal fluid which Dr. Kramer, of Cincinnati, has been doing. This may readily explain the failure of the Haynes operation to provide adequate drainage in otitic meningitis. According to Kramer, circulation of the cerebro-spinal fluid below the tentorium is separate and distinct from that above the tentorium. If this be true, then drainage through the cisterna magna will fail to relieve the areas commonly involved in otitic meningitis. Kramer has also shown that methylene blue injected in the lumbar region of animals will enter a small pore in the lower portion of the spinal cord and ascend (ciliated epithelium) through the central canal to the fourth ventricle. Through a similar action he explained the fatal effects occasionally noted when serum (with toxic trichresol preservation) was injected in the lumbar region of children for the relief of epidemic meningitis.

DR. SEYMOUR OPPENHEIMER spoke of a case which Dr. Haynes quoted in his original paper. All the evidences of acute meningitis were present, and there were signs of some intra-cranial involvement. The child was operated upon promptly, the findings being sinus thrombosis, mastoiditis, extra-dural abscess, and a large area of encephalitis. The patient recovered. Four weeks later meningitis developed. Lumbar puncture was

made and streptococcus mucosus found. Six months later the child again went into coma, and again the streptococcus mucosus was found. It had had previously a very short and acute attack of nasal infection. The post-nasal infection could easily go through the roof of the aural cavity, the bony wall having been removed at the original operation. Fortunately he obtained a post-mortem. He found evidences of an acute meningitis over the region of the middle cranial fossa. In view of the fact that it is impossible to differentiate clinically between circumscribed and diffuse meningitis, it is probable that many cases reported as cured are cases of very circumscribed suppurative meningitis.

The Exploratory Opening of the Sphenoid Sinus. DR. CHARLES PREVOST GRAYSON, Philadelphia.

By this exploratory opening is meant one that can be made so extemporaneously, with so little discomfort to the patient, so little derangement of his ordinary pursuits, that it may be employed for merely exploratory or diagnostic purposes. The artificial opening advocated is made on the anterior wall of the sphenoid sinus, at a point as close as possible to the angle of junction of its floor with its internal wall. As regards the safety and facility with which it is made, this opening is on a par with the puncture of the nasal wall of the antrum beneath the inferior turbinate, or with the simple enlargement of the ostium frontale by means of the rasp or other instrument. This opening can be utilized for both exploratory and therapeutic purposes, and it has the advantage of not involving either the destruction or the crippling of any of the functionally valuable intra-nasal structures.

The technic of the operation is as follows: The inner or nasal portion of the anterior surface of the sphenoid body is exposed as widely as possible by shrinking the turbinates with one of the adrenal preparations. The field of operation is anesthetized with cocaine and then rendered ischemic by the adrenal solution. When this has been done the course of the sphenopalatine artery is usually so distinctly visible that it can be readily avoided. The application of a dilute tincture of iodine will be sufficient for purposes of sterilization. The instrument with which the sinus wall is perforated is a straight drill, tipped with a conical burr 6 mm. in length and measuring $2\frac{1}{2}$ mm. from its point to its greatest diameter. The drill is applied 2 or 3 millimeters above the line which divides the anterior from the inferior surface of the sphenoid body and close to the attachment of the ethmoid plate in the middle line. The opening it makes is 2 mm. in diameter, which is quite sufficient to permit the escape of any fluid within the sinus, the introduction of an appropriate irrigation cannula, or, should it seem advisable, the distal jaw of a biting forceps with which the opening may be enlarged. If the exploration of the sinus proves to be pathologically negative, the breach will close within twenty-four hours.

In closing, the author reiterated that his object in exploiting this method of investigating the sphenoid sinus is, in the first place, to dislodge the idea that the ostium sphenoidale should always be the starting point for any operation upon the sinus; to lessen, if successful in this, the frequency with which the middle turbinate is unnecessarily

removed, or, in other words, to substitute for a somewhat formidable and tissue-destroying operation one that is technically simple and unattended by any loss of functionally useful tissue; to lessen, also, the hesitation with which some thoroughly qualified men contemplate the surgical invasion of this sinus.

DISCUSSION.

DR. H. HOLBROOK CURTIS defended the usual operation of opening the sinus through the natural orifice for the reason that the frequent excursions of the cell described by Sieur and Jacob, impinging on both the sphenoid and antral walls, might, by injury, lead to an infection, and because the cell overhung the spheno-palatine fissure and gaglion, these structures, as well as the optic and superior maxillary nerves, might be injured in case Sieur's cell was entered by accident and infected. Dr. Curtis then went into the question of opening the inferior face of the sinus, which Dr. Grayson explained he had not advocated, and the remarks were withdrawn.

DR. ROSS HALL SKILLERN fancied he could hear Dr. Grayson saying to himself, "How long, O Cataline, wilt thou abuse our patience?" He was not in accord with the essayist as to the indications for, or the method of opening the sphenoid. Unless purulent secretions are present in the spheno-ethmoidal fissure in frank cases, or the typical pressure symptoms are present in the closed and latent type, he does not perceive the indication for exploratory opening. As to the method, he prefers the one which is constantly under control of the eye. This is nearly always possible in the presence of disease, for it is a well-known fact that a diseased sinus is always easier to sound than a healthy one, this being due to the enlargement of the drainage passages by the constantly outflowing secretion. In his experience this was peculiarly adaptable to the sphenoid. Under these circumstances, after the sound has found the ostium and has penetrated into the sinus, it is a simple matter to introduce a small Hajek curette or an evulsor and to make a comparatively large opening in the anterior wall and at its thinnest part. All danger of penetrating the cribriform plate or completely missing the sinus was obviated. It would seem that this is really the safest and sanest method of approaching this cavity for diagnostic and therapeutic purposes.

DR. FRANK R. SPENCER said one can easily use the Andrews probe to find the opening. It is perfectly justifiable to remove the posterior half or one-third of the middle turbinate in order to expose the sphenoid cavity. The thin anterior wall can be broken down and an opening gained which will be large enough for therapeutic purposes. That can be done with cocaine anesthesia in simple cases.

DR. JOHN C. ROE said: "It is not difficult to find the natural opening of the sphenoidal sinus, although I think Dr. Skillern had located it somewhat lower than I have generally found it. My own method of locating the opening is to pass the probe along the lower border of the middle turbinate, using it as a guide, then by turning the end of the probe slightly upward, the sphenoidal opening is readily entered. In some cases the opening can be seen by anterior rhinoscopy when the middle turbinate is small. When the opening has been found, the cavity can

be explored in every direction and any abnormalities dealt with as conditions indicate. Since suppurative conditions are those most commonly found in these cases, free drainage of the cavity, as pointed out by Dr. Grayson in his excellent paper, is of the utmost importance. This I have established most easily by taking away the lower wall with forceps cutting downward in an antero-posterior direction. In the removal of this bone, however, I have not often found it so slender and fragile as Dr. Grayson has indicated, but, on the contrary, usually quite hard and dense, sometimes requiring the use of the chisel.

"I may relate, in this connection, that a few years ago there came under my observation an exceedingly interesting case of tic douloureux, due to a myxomatous growth, occupying the entire cavity of the sinus, and on the removal of this growth the tic douloureux subsided.

"When we consider the great anatomical variations in different skulls, in no case would I attempt to drill or chisel an opening into the sphenoid sinus without first having found the natural opening to serve as a guide for the operation."

DR. TALBOT R. CHAMBERS thinks it better to start with the natural opening, enlarging it as much as necessary, rather than to make a second opening.

DR. GRAYSON, in closing the discussion, could only repeat that in his opinion the chief objection to the usual method of opening the sphenoid sinus is that it is begun in what is concededly a region of risk instead of being cautiously ended there. He thinks it better from every possible point of view to begin the operation at the point he has designated. Anyone familiar with the normal anatomy of the sinus, as well as with its occasional abnormalities, must admit that this is the safest locality not only at which to enter it but from which to begin the removal of its anterior wall. The terms thin and thick which has been applied to this wall are purely relative, and when one speaks of its lower, being thicker than its upper portion it means no more than a difference of one or two millimeters, which is certainly of no surgical consequence whatever.

It is scarcely conceivable that anyone with the delicacy of touch that the rhinologist possesses can inflict any injury through this operation. Its greatest merit, in fact, lies in its freedom from any unnecessary or concomitant injury. The opening is made under the direct inspection of the eye and there is no flow of blood to obscure the field of operation. In the large majority of cases it is necessary to remove no more than the inner portion of the anterior wall and he has yet to hear a single good reason for continuing the ablation of the middle turbinate in order that we may begin our sphenoid operation at its awkwardly and, comparatively, dangerously placed ostium.

New Technic for the Removal of Intrinsic Growths of the Larynx. DR. ROBERT C. LYNCH, New Orleans.

Published in full in the July, 1914, issue of THE LARYNGOSCOPE, p. 645.

Proper Fields of Medicine and Surgery in Diseases of the Upper Air Tract. DR. JOHN A. THOMSON, Cincinnati.

Published in full in the August, 1914, issue of THE LARYNGOSCOPE, p. 741.

DISCUSSION.

DR. JOSEPH H. ABRAHAM regretted that he had come in too late to hear all of Dr. Thompson's paper, but he heard what was said with reference to Vincent's angina, in which connection he wished to present a remedy which he used in four cases of verified Vincent's angina. It consisted of pure carbolic acid, fused, and applied, upon a cotton-tipped applicator, to the ulcerating surfaces. Two applications were made a day, one when the patient came in the morning, and the other in the afternoon. The acid was allowed to remain in contact with the tissues from two to five minutes, and then neutralized with pure alcohol. The patient was given a simple cleansing mouth-wash to use at home. In three cases, when the patient was sent to the pathologist the next morning, no bacilli and no ulceration could be found. In the fourth case a few scattered organisms could be found in the tonsils and quite a number in an ulcerated tooth socket. He removed the root of a tooth, curetted the cavity, and applied carbolic acid, and the next morning there was no culture. In each case the acid was used twice. Subsequent examination failed to reveal any bacteria, and the patient was dismissed with a cleansing wash.

DR. LEE M. HURD considers intra-tracheal injections of various medications with oil one of the best methods of treating these inflammations. Intra-tracheal injections are not employed as they should be. In Vincent's angina any acid will do,—trichloroacetic, strong nitric, or any acid or strong caustic. The spirillum will not be found the next day. In very severe cases salvarsan, as suggested, is good. The oily injections will relieve the chronic laryngitis, and are useful in chronic and acute inflammation of the trachea. Sweet oil or petrolatum, about two drams, with some medication, injected into the trachea and bronchi has been found efficacious.

DR. TALBOT R. CHALMERS referred to the theory of Sir W. Arbuthnot Lane, of London, concerning the use of petrolatum. According to this theory, petrolatum passes through the intestine and is not absorbed. Dr. Hurd advocates, in consonance with Dr. Thompson, the injection of two drams into the bronchi; Dr. Chambers inquired what became of that oil. If not absorbed, it would become a foreign body.

DR. HURD, replying to Dr. Chambers, said the vaselin which he used was probably absorbed.

DR. GEORGE L. RICHARDS thought the demonstration of Dr. Beck of very much greater value to laryngologists than theorizing about the absorption of this or that oil. He had been especially impressed with the picture showing the blood vessels, which illustrated so clearly why hemorrhage takes place after these operations. The sections demonstrated also why there is infection and more or less muco-purulent periostitis after these operations. Work such as Dr. Beck has presented leads to more exact knowledge. Therapeutics is largely a matter of theory, but this histo-pathological work is certainly conducive to exact knowledge.

DR. GEORGE F. COTT recalled that in 1901, Dr. Thompson had read a paper on this subject. Since that time he had followed the suggestions then given, with very good results.

DR. THEODORE CORWIN thought the intra-tracheal injections most valuable. Patients could be taught to make the injections themselves, using a long dropper and injecting fifteen or twenty minims two or three times within ten minutes and repeating this every half hour or hour, so long as the cough was annoying. He used vaselin or other oil in combination with menthol, 1 or 2 per cent, camphor 1 per cent, or anything that might be desired. For office treatment the tracheal syringe was preferable, giving doses of one or two drams. It should be preceded by a downward spray of 2 per cent menthol to render the larynx less sensitive to manipulation with the syringe.

DR. RICHARDS added that some years ago he used oils of one kind or another, and instructed his patients to use nebulizers. He has reached the conclusion that oils are nearly valueless. It was better to employ something corresponding as nearly as possible in specific gravity to that of the normal serum.

DR. THOMPSON, in closing the discussion, said that when Dr. Harris sent out his circular letter asking for suggestions concerning this meeting he thought it wise to have several papers concerning the treatment of the diseases of the upper air passages. Dr. Beck agreed to discuss the scientific side, while he took the therapeutic side of the question. He had endeavored to discuss the matter from the point of view of every-day practice. The most important point, and one which he would reiterate, was expressed in the opening sentence of his paper: "One-half of all the diseases it is our daily work to treat are curable by medicinal means alone."

DR. BECK, in closing the discussion, said about 5 per cent of his cases were amenable to non-surgical treatment. He had reference to diseases of the upper respiratory tract not those of the trachea.

Tuberculosis of the Middle Ear. DR. H. H. BRIGGS, Asheville, N. C.

The frequency of tuberculosis of the middle ear in persons suffering from tuberculosis elsewhere in the body has been placed at twenty-five per cent. Of 1,500 school children examined by Westmacotte, 2 per cent were found to have tuberculosis of the middle ear. The disease is probably of far greater frequency than statistics show, and the true diagnosis is often mistaken because its onset is so insidious that attention is not easily called to the condition and no observation is made. Moreover, when the case presents itself the condition usually has passed from that of a pure tuberculous process and becomes a mixed infection, the symptoms of the suppurative condition making the true nature of the initial disease. The careless manner of classifying all discharging ears as suppurative otitis media, without recourse to the microscopic or inoculation tests, is unfortunate.

The middle ear must be regarded as belonging anatomically and bacteriologically to the upper respiratory tract, as insisted upon by Goldstein, who considers primary tuberculous infection of the middle ear of respiratory origin.

Among the predisposing factors may be classed general debilitating diseases, the hereditary influence of tuberculosis, syphilis, association with tuberculous individuals, unhygienic environment, over-crowding, poor

food, cachexia,—in short, any condition of surroundings or constitution which induces a lowering of the systemic power to combat infection. Among the predisposing causes of more immediate influence may be regarded (1) the existence of a tuberculous lesion elsewhere in the body, especially pulmonary tuberculosis with cavitation, and tuberculous disease of the glandular system; (2) abnormal conditions of the upper respiratory tract, including the presence of naso-pharyngeal adenoid growths which have been shown by microscopic examination and inoculation tests to be the frequent seat of a latent tuberculosis; (3) infancy and childhood offer a predisposition for various reasons.

The channels of infection are: 1. Mechanical, through the Eustachian tube, either air-borne or introduced into the tympanic cavity by the aid of particles of mucus or foreign matter during the acts of swallowing, coughing, sneezing, or blowing the nose. 2. Infection along the Eustachian tube by other than mechanical means. 3. Through the blood channels. 4. Through the lymphatics. 5. Via the external auditory canal. 6. By extension of an intra-cranial infection through the internal auditory canal, Fallopiian canal or the labyrinth. This is mentioned as merely a possibility.

To the author the mechanical theory of infection, especially secondary, seems simplest, easiest and most probable in the great majority of cases. The greatest number of cases occur in early childhood and advanced phthisis, when the conditions favorable to the mechanical passage of infectious material through the Eustachian tube are at their maximum.

Clinically, two rather distinct forms of tuberculosis of the middle ear manifest themselves,—acute and chronic. In each may be found all the changes, from slight infiltration of the mucous membrane to extensive necrosis of the temporal bone. Rapid loss of tissue is characteristic of the acute form, resulting from ulceration of the tubercles throughout the mucosa. In the chronic form the process runs an asthenic course, and infiltration, caseation and necrosis follow less rapidly and with more characteristic tuberculous sequence.

The essential symptom which differentiates tuberculous otitis from other forms is the absence of pain. Even though the destructive process is rapid and the appearance of the *membrana per se* simulates an acute purulent otitis there is seldom any complaint of pain.

In determining the diagnosis, the family history should be carefully considered with regard to tuberculosis, and the patient's habits, residence, environment should be ascertained to determine whether there has been an undue exposure to tuberculous persons or unhygienic surroundings. Facial paralysis, especially in children, occurs in one-third of the cases, against one to two per cent in non-tuberculous conditions, and is of special diagnostic significance. The sanious and foul condition of the discharge, especially when particles of bone are incorporated, excites suspicion. Marked impairment of hearing, absence of headache, occurrence of hemorrhage, are considered by some as diagnostic points. Tuberculin injections and blood pressure changes (hypotension) are also considered. The only positive means of diagnosis, however, are (1) finding microscopically in the discharge or granulations the tubercle bacillus, or (2)

giant and epithelioid cells and caseation in the tissue. (3) By experimental inoculation, reproducing tuberculosis. The prognosis is, as a rule, unfavorable.

The treatment naturally divides itself into hygienic, dietetic, medical, and surgical, as the case indicates. The use of tuberculin has proved so successful in so many forms of tuberculosis that no tuberculous process in any way localized can be considered invariably to contra-indicate its use. The author could see no reason why it should not be indicated and of decided value in properly selected cases of tuberculosis of the middle ear.

DR. FRANK R. SPENCER mentioned a method of making the diagnosis of tuberculosis of the middle ear, consisting of cleansing the canal first, introducing an aspirator which he has brought from Berlin, aspirating and injecting the pus into a guinea-pig. The pus, when aspirated, might not show tubercle bacilli, but the organisms could be positively demonstrated after the injection into the guinea-pig by the examination of the animal's organs several weeks later.

Corrective Rhinoplasty. DR. LEE COHEN, Baltimore.

Published in full in the June, 1914, issue of THE LARYNGOSCOPE, p. 565.

DISCUSSION.

DR. JOHN O. ROE: "Dr. Cohen's paper is a verification of the old saying that 'imitation is the sincerest flattery.' I am sorry, indeed, to see that Dr. Cohen is inclined to give me scant recognition as the originator of subcutaneous plastic surgery in the correction of nasal deformities, for it must be recognized and distinctly understood that this method of correcting nasal deformities subcutaneously originated entirely with me.

"In describing the method of making the initial incision from the interior of the nose, Dr. Cohen says: 'For these submucous operations, then, incision as first advocated by Roe should be made within the vestibule of the nose.' I wish to say that this method is not simply advocated by me but, as a matter of fact, was originated by me. It is my method which Dr. Cohen has copied from start to finish, without the courtesy of giving credit for it.

"Dr. Cohen on one occasion had the privilege of witnessing my work, which I am always glad to show my confreres and which, as he stated at that time, was the incentive that gave him his special interest in the correction of nasal deformities. The second case that Dr. Cohen mentions in his paper—the case of the congenitally, over-sized nose, causing the young man so much annoyance and mental distress—Dr. Cohen had the courtesy to refer to me and came with the patient to my office to see the operation, which I performed at that time in his presence on May 30, 1912. In connection with this operation, he saw the distinct method of elevating the skin or 'undermining' it, as he chooses to term it, the forms of dressing necessary in these cases, the use of my saddle splint, which I have used from the beginning of this work, and the method of holding it in place with the strap of adhesive plaster across the face, the use of the strips or pieces of adhesive plaster under the saddle, one placed above the other, in order to produce extra-pressure at points where necessary, the

making of the nose narrower by the removal of cartilage and bone and by fracture, the shortening of the nose by taking out a sufficient amount of cartilage of the anterior portion of the septum and of the alae and stitching the projecting part of the nose back as far as necessary to correct the deformity, and the use of the sling of adhesive plaster to draw up and support the end of the nose after operation. All of these points and others, in the management and technic, Dr. Cohen had the opportunity to see and to learn about, for all of them were employed on this patient, whose case was a complicated one.

"In this case also the nose was altogether too high, and had to be cut down, and the method by which it was done, Dr. Cohen had had the discourtesy to give credit to Joseph of Berlin, whereas the same operation was described and illustrated by me in an article on 'The correction of angular deformities of the nose by a subcutaneous operation,' and published in the *Medical Record*, New York, July 18, 1891, which was seven years previous to any published article by Joseph on this subject.

"It would have done Dr. Cohen no harm to have had the courtesy to mention the facts as above stated instead of leading the reader to infer that these methods were largely his own methods and thereby indirectly trying to appropriate them to himself. Joseph, of Berlin, is also quite in line with the European Germans, many of whom ignore American authors, although quite willing to appropriate their work.

"The technic which Dr. Cohen has collected and described in his paper, however, applies only to the correction of angular deformities of the nose, which he chooses to call 'hump nose,' or to the correction of unduly large or 'over-sized' noses, as he designates them and to deviated noses, the extent to which he has pursued the subject up to the present time. The other varieties of deformities, those attended with depressions and other distortions of the nose he will find much more difficult."

In emphasizing the fact of having originated the method of correcting nasal deformities by operation subcutaneously performed, Dr. Roe further said: "It does not matter what modifications may be made in the operation in any particular case, whether the operation is done by cutting up or cutting down, with a knife, with bone scissors, with a saw, with a chisel, or with whatever instrument or instruments that can be most advantageously employed in that particular case, the fact remains that the subcutaneous correction of nasal deformities is a method which I have the honor, if honor there be, to have originated and first employed. This fact should not, as a matter of professional ethics, be ignored or appropriated by another without due recognition."

DR. COHEN, in closing the discussion, said he had no intention, in his references to Dr. Roe's work, of detracting therefrom. He insisted, however, that there was no systematic description of this work prior to that mentioned in the paper. He had operated upon about ten cases before he ever saw Dr. Roe operate.

Use of Vaccines in the Treatment of Chronic Diphtheria Carriers. Dr. ARTHUR I. WEIL, New Orleans.

Published in full in the September, 1914, issue of THE LARYNGOSCOPE. p. 804.

BOOK REVIEWS.

Asthma and its Radical Treatment. By JAMES ADAMS., M. A., F. R. F. P. S., Hamilton Dispensary Aural Surgeon, Glasgow Royal Infirmary; Pp. 184, with 4 illustrations. Paul B. Hoeber, New York, 1913. Price, \$1.50, net.

The author believes that asthma is primarily a toxemia. This toxemia arises partly in the bowel, partly in the tissues. It arises partly by absorption of nitrogenous poisons resulting from intestinal putrefaction under microbic action; but mainly it is due to an error in nitrogenous metabolism, the result of imperfect oxidation or enzyme action. The toxemia, whether arising in bowel or tissues or both, tends to show itself first as catarrh, later as spasm, in the respiratory tract.

The giving of horse-serum whether diphtheria, antitoxin or otherwise, for the treatment of asthma, as is sometimes done, is to be deprecated, especially where there is idiosyncrasy to eggs, fish, shellfish or horses. Asthma can in most cases be absolutely controlled by due attention to dietary and efficient open-air exercise, including occasional fasting.

The asthmatic paroxysm involves bronchiole spasm and a hyperemia of the mucous membrane. Both result from toxemia. This hyperemic condition may vary from that of the recurrent "bronchitis" of children to "angioneurotic" edema and acute pulmonary edema, according to the nature and amount of the toxemia. It may, especially in children, long precede the onset of typical spasm.

The author admits the value of nasal treatment but holds it subsidiary to the treatment of the toxemia. This toxemia alters the asthmatic so that his condition becomes like a powder magazine; nasal disease is apt to supply sparks which cause the explosions of asthma.

He deprecates the excessive nasal surgery that is so often inflicted on the asthmatic. Cauterization of the septal tubercle is sometimes a valuable temporary procedure, but cauterization of the lower turbinals is an unnecessary addition.

There is a toxic basis for hay-fever kindred to that of asthma; it seems to be slightly different, favoring the irritant action of certain pollens in the nose and the production of coryza rather than of bronchial spasm, though that also is produced in many cases. The toxemia is the predisposing cause of hay-fever, the pollen the exciting cause.

Adams claims that every case of uncomplicated asthma, properly handled, will improve and most of them will get well. In 100 cases of more than ten years' standing, which he reports in detail, 63 were cured or "practically cured," 30 were improved and 7 not improved.

The treatment advocated is principally dietetic. Care should, however, be taken to establish normal nasal respiration if this be impeded. Not only should the food be limited, in quality, quantity and simplicity, to the actual requirements of the individual, but where the asthma is pronounced the patient must fast one day a week.

Active open-air exercise is necessary. The life of the asthmatic should be much the same as that of the convalescent consumptive; windows open night and day, rooms as free of dust as possible, not less than two hours open-air exercise daily. Medicinally some of the usual formulas are given to relieve the paroxysms, but a mercurial purge is given at least once a week to every patient.

The work shows evidence of painstaking observation and careful analysis of cases observed in the practice of the author. Although lacking experimental confirmation of the toxic origin of asthma, it merits careful consideration, especially in view of the therapeutic success evidenced in the reported cases.

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The Career of Dr. Weaver. By Mrs. Henry Backus, pp. 379, with illustrations by William Van Dresser. L. C. Page & Co., 1913. Price, \$1.25.

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IN MEMORIAM.

Dr. Joseph Scribner Gibb, of Philadelphia, was stricken with apoplexy while playing golf on the links of the Overbrook Golf Club, near Philadelphia, and died shortly afterwards, on November 2, 1914.

Dr. Gibb was born in Philadelphia, February 11, 1859. He graduated from the medical department of the University of Pennsylvania in 1880, serving as a resident physician at the Philadelphia Hospital, taking up the practice of general medicine. In the early nineties he began the practice of laryngology and otology to which he devoted himself exclusively during the latter years of his life. He was a member of the College of Physicians of Philadelphia, and at the meetings of the Section on Otology and Laryngology his papers were always welcomed by the Fellows and listened to with attention. He served at one time as Chairman of the Section, during which period his enthusiastic labors resulted in the addition of much valuable material to its scientific work. Dr. Gibb was a member of the American Laryngological Association and a faithful attendant at its meetings, at many of which he read valuable contributions.

For many years Dr. Gibb was laryngologist and aurist to Girard College in Philadelphia, a position which devolved upon him great responsibility and arduous labor.

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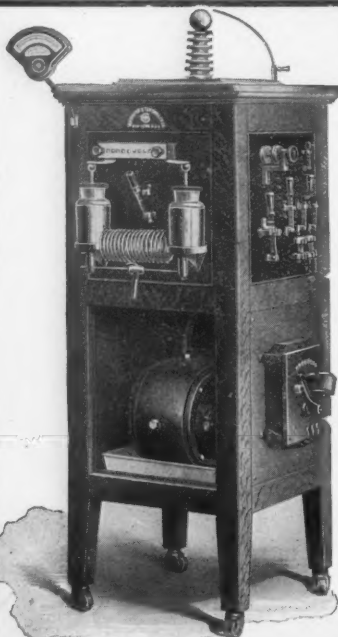
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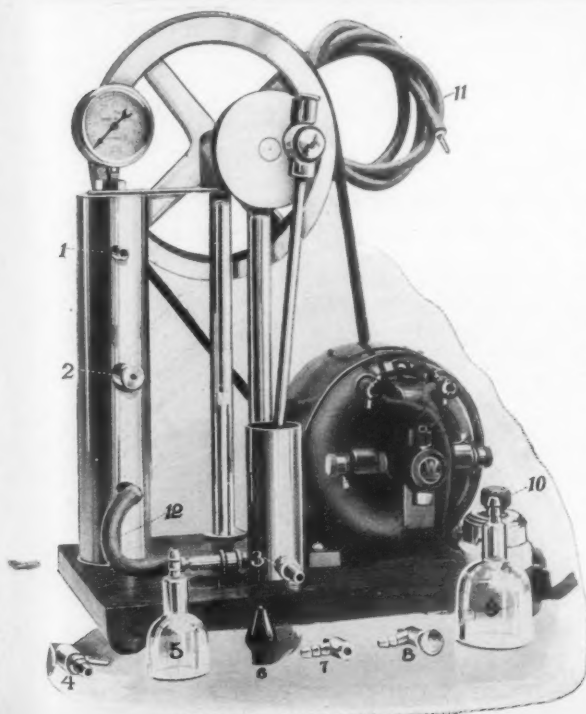
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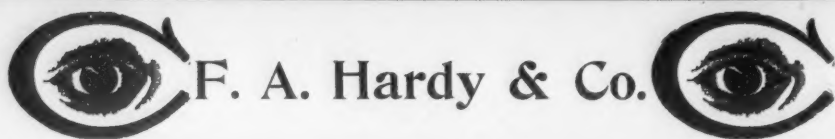
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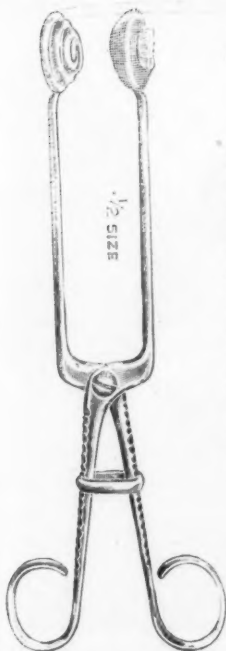
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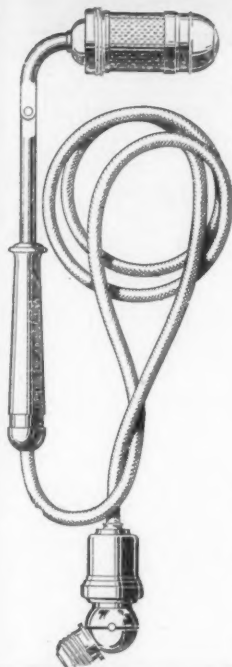
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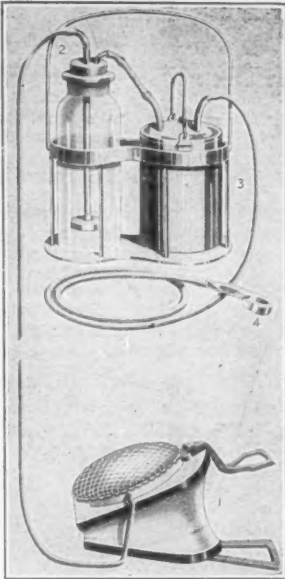
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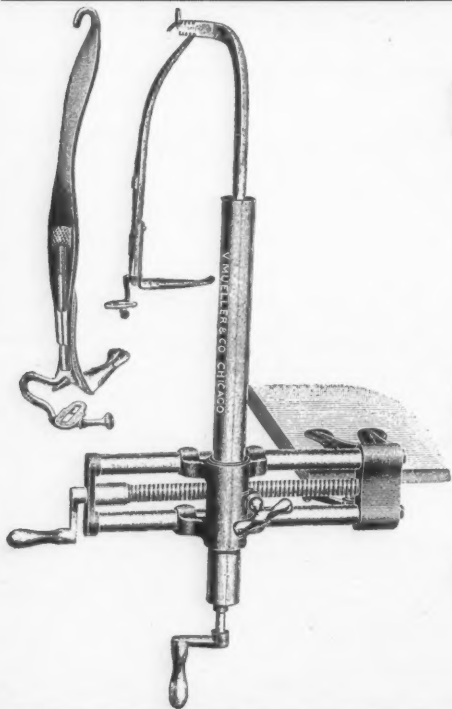
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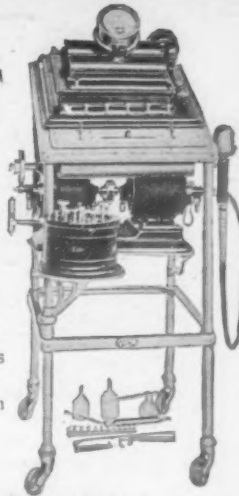
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THE foregoing is a simple statement of fact. Seven words are sufficient to express it. But back of these words are *years of toil and study*. Back of these words are *hundreds of experiments*—fruitless for the most part, but yielding in the end the long-sought secret.

We gave Taka-Diastase to the world in 1895, and throughout the nineteen years that have since elapsed the product has been recognized by the medical profession as the most efficient agent in the treatment of amylaceous dyspepsia.



"Every desired form."

Potent as it was at its inception, we have constantly sought to improve Taka-Diastase. Once before we enhanced its value fifty per cent. Now, by other improvements in the process of manufacture, we are again enabled to increase its liquefying power, *this time multiplying its efficiency by two.*

Our improved Taka-Diastase will liquefy 300 times its weight of starch in ten minutes under proper conditions.

In all of our Taka-Diastase preparations—liquid, powder, capsule, tablet—as well as in the several combinations with other agents (both capsule and tablet)—the high-potency product is now being used.

We have not advanced the price.

FOR A FULL LIST OF OUR TAKA-DIASTASE PRODUCTS,
SEE OUR CATALOGUE, PAGES 174-175.

Home Offices and Laboratories,
Detroit, Michigan.

Parke, Davis & Co.

